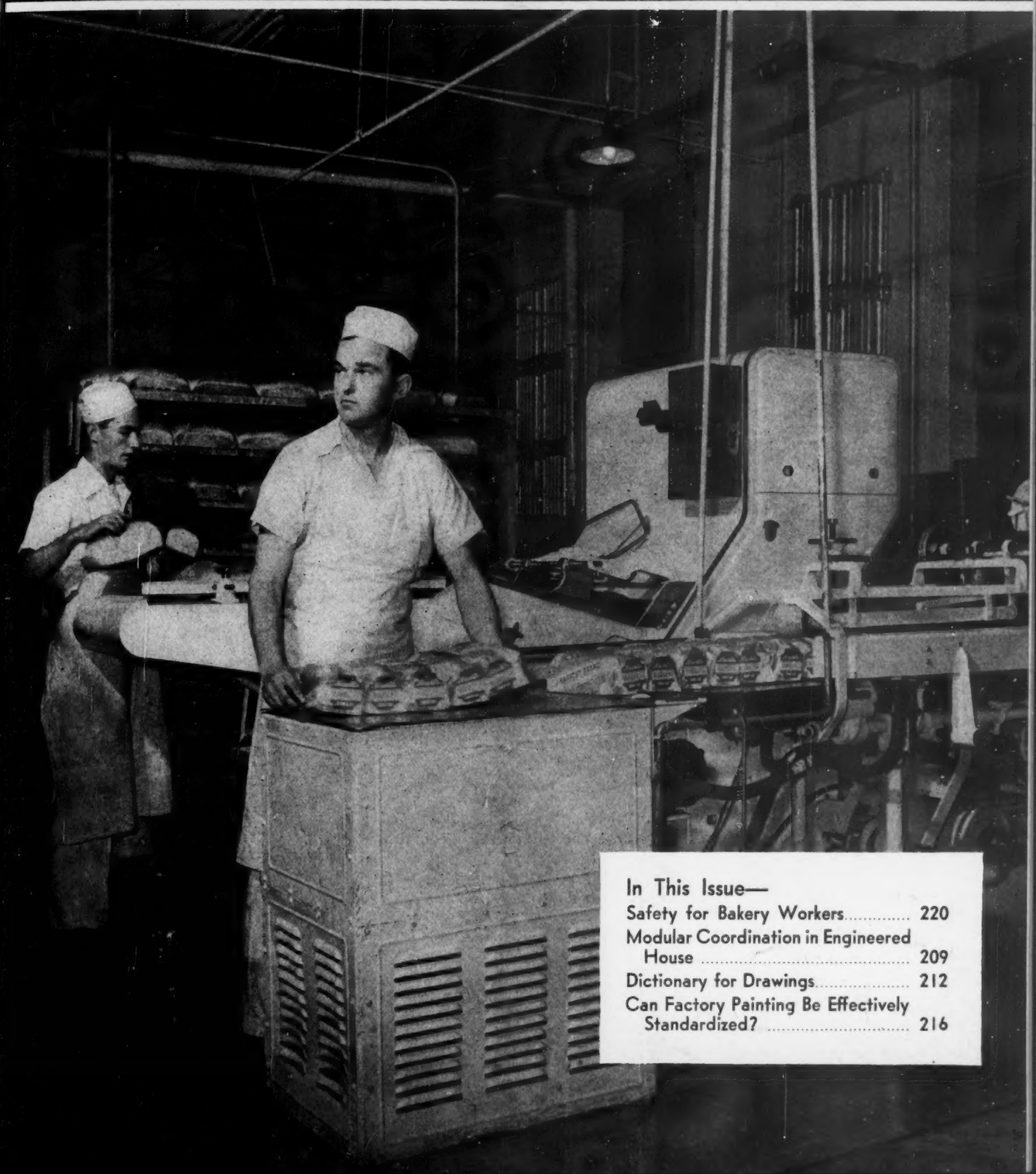
Industrial

September 1947

Standardization



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Some 2000 industrial concerns hold membership either directly or by group arrangement through their respective trade associations

Readers Write

Sees Need for Standard on Carbon Tetrachloride

Department of Education and Research
The American Institute of Architects
Washington, D. C.

Gentlemen: I was interested in reading in the June issue of INDUSTRIAL STANDARDIZATION that differences of opinion among the members of Committee Z37 continue to delay a determination as to a maximum allowable concentration. I believe an incident which recently occurred in the vicinity of Washington and which resulted in two deaths is an evidence of the need for more widespread public knowledge as to the lethal characteristics of carbon tetrachloride under conditions which may be of frequent occurrence.

A few weeks ago our local papers carried the story of three men who were engaged in certain house cleaning operations. In this connection it was reported that they were using a bottle of "Carbona," a tetrachloride preparation. It would appear that the day was warm, the room in which the men were working not well ventilated, and that the men were perspiring freely. No particular attention was paid to the breaking of the bottle and the fumes of the liquid were incidentally inhaled, and, as reported by a physician, the effects of the poison absorbed through the pores of the skin. A day or two afterward one of the men became ill and was taken to a hospital where he died some two or three days later. Following his death the second man was stricken and he also died within a few days. The third man was not particularly affected as it was reported he had not been so directly exposed to the fumes of the liquid.

As carbon tetrachloride, and its substitutes marketed under proprietary names, are very generally employed for household cleaning purposes it would appear to be a much needed public service for definite standards to be established which will provide the public with information that will serve as a protection against the selection and use of a product so potentially hazardous to human life.

THEODORE IRVING COE
Technical Secretary.

Our Front Cover

With the tremendous expansion in the breadbaking industry, accident hazards have increased accordingly. For the story of the first national safety code in this field recently published by the ASA, see page 220.

Industrial Standardization Vol. 18 No. 9

Published Monthly by AMERICAN STANDARDS ASSOCIATION 70 E. 45th St., N. Y.

In This Issue

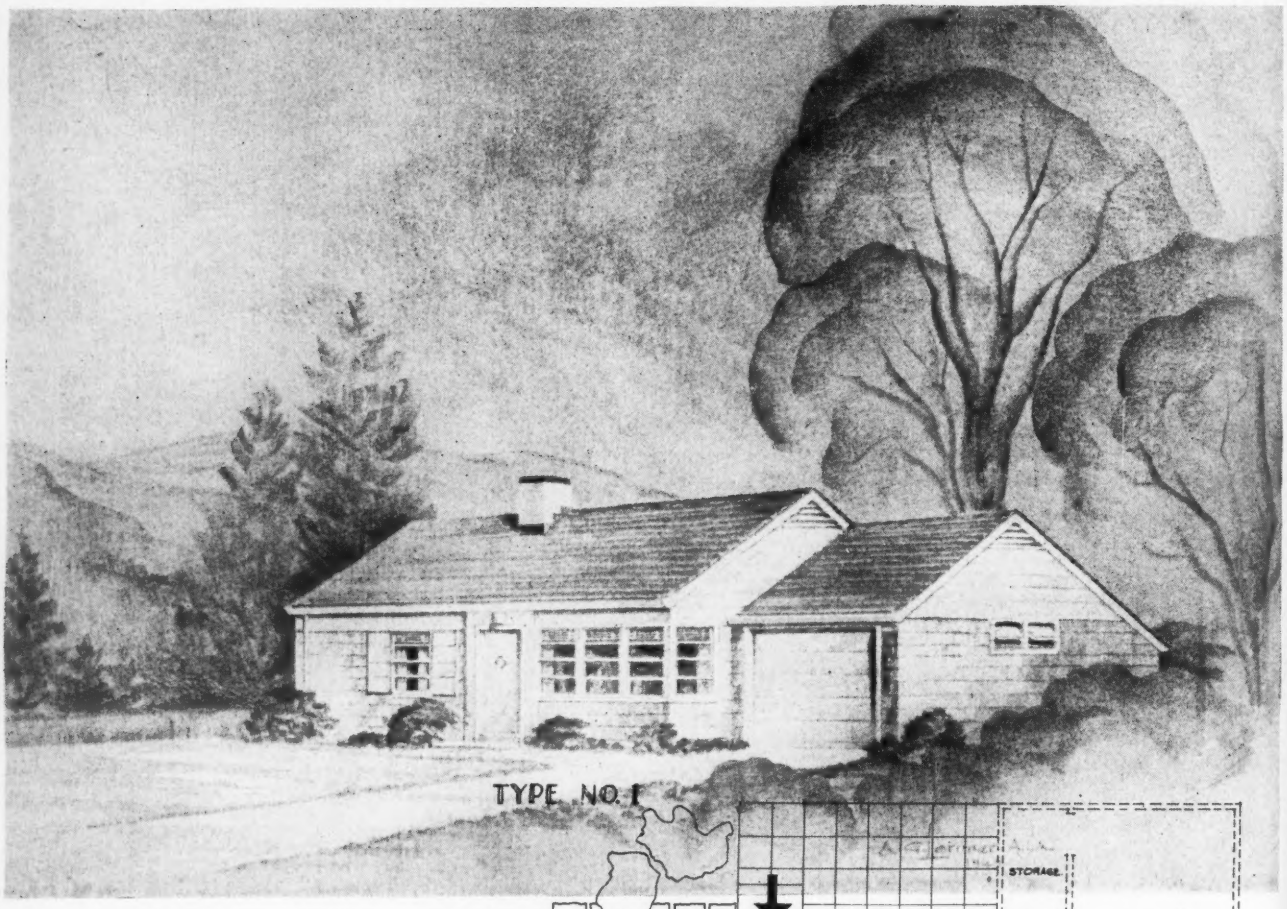
September, 1947 Ruth E. Mason, Editor 35 Cents

ASA
Reg. U. S. Pat. Off.

The American Standards Association is a federation of national groups dealing with standardization. Through it, government, industry, labor, and the consumer work together to develop mutually satisfactory national standards. It acts as the authoritative channel for international cooperation in standardization work.

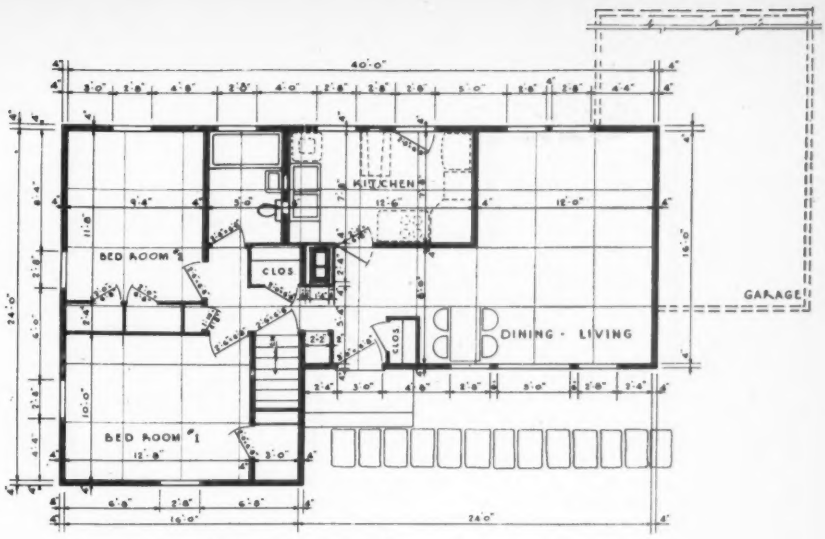
Subscription price $4.00 per year (foreign $5.00). Special to schools and libraries $2.00 (foreign $3.00). Re-entered at 2nd Class Matter 7/31/43, at the Post Office, New York, N. Y., Act of March 3, 1879.

Modular Co



Application of the program's principle is illustrated in a few specific house designs, the smallest and most economical of which is Type I, built on a basic floor plan of 16 by 28 feet. Two of these basic units, placed at right angles to each other, form the L-shaped house shown on the opposite page.

Cordination in Engineered House!



TYPE 2B (WITH BASEMENT)

Industry Engineered Housing Program demonstrates the savings to be made in construction of low- and medium-priced houses through use of modular coordination.

RECOGNIZING that during this period of high prices and insufficient housing the reduction of housing costs is an important object to be achieved, the National Retail Lumber Dealers Association and the Producers' Council, Inc, have undertaken to jointly sponsor a program which offers a possible solution for those builders who are interested in constructing low- and medium-priced houses.

Organized two years ago, the Industry Engineered Housing Program has just completed basic engineering studies and demonstration plans which illustrate the economies to be achieved in home building through the application of modular coordination to house design.

This principle of modular coordination is based upon the use of a three-dimensional grid, spaced four inches in each direction, around which an entire building structure and its component parts can be designed. Where, with conventional building methods, doors, windows, sills, and masonry products vary in size and shape—with coordinated modular products, each is designed in relation to this four-inch grid. Where, too, there is usually much waste of time and material in cutting and fitting to meet dimensional specifications—with modular products, there is easy field installation with a minimum of cutting and fitting

Since 1939, the American Standards Association's Sectional Committee A62 on Coordination of Dimensions of Building Materials and Equipment has been actively engaged in standardization on the four-inch module. The four-inch figure was selected over other sizes because, actually, it has been the controlling dimension in building since the early days when selection of 16-inch and 24-inch stud and joist centers for frame construction first paved the way for the recent application of this principle to other products in four-inch multiples.

Actually, what has been done in the Industry Engineered Housing Program is to bring together in one over-all plan, all of the known and tested means of cutting down the cost of building a home. None of the individual ideas is new, but bringing all of these together in one coordinated plan is new.

Dimensional Coordination Applies to Homes of Other Design

While this detailed study of dimensional coordination and erection methods as worked out by the experts of the program has been applied to a single basic house plan with variations, it should be emphasized that the principles illustrated are applicable to homes of any other size or design. The sponsors want it known that they are not interested in developing new house plans or in promoting the sale of any particular type or design for a home. Any competent architect can incorporate these economy features into any special design.

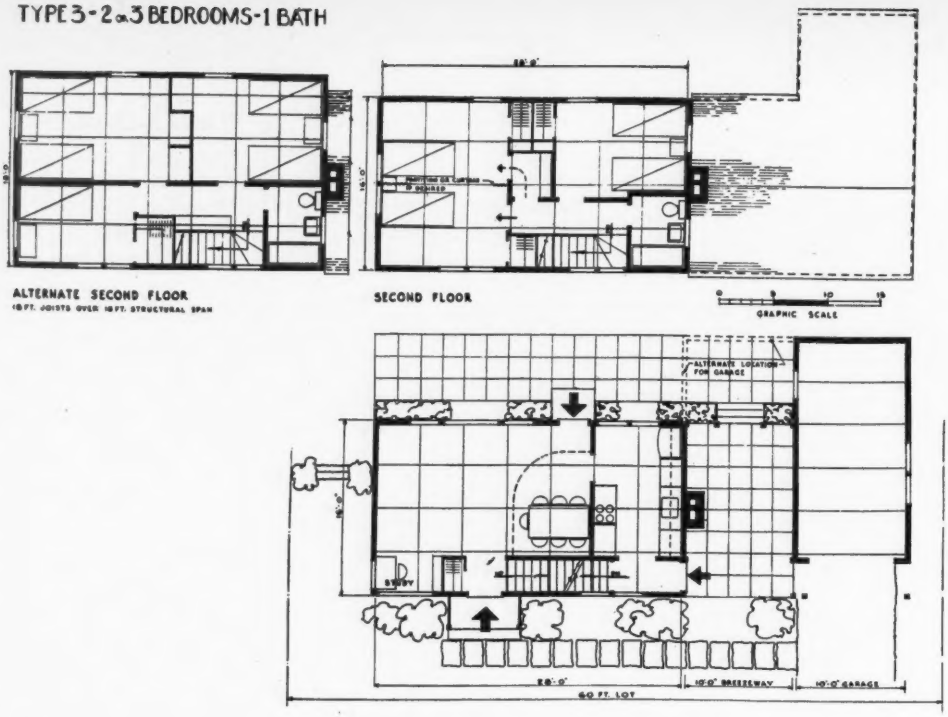
In order to demonstrate the application of the principle developed, however, it has been necessary to use specific house plans for illustration. It is expected, too, that selected members of the National Retail Lumber Dealers Association and the National Association of Home Builders will construct these houses in strategic areas.

As a basic working unit for the program, a floor plan of 16 feet by 24 feet has been selected. The proposed plan was carefully analyzed before final choice was made to be sure that it had definite merit, particularly in regard to the controlling width of 16 feet. It was found that this could be easily spanned by 2-inch by 10-inch joists and without requiring intermediate girders or footings. In addition, lumber representatives indicate that the 16-foot length is very readily available throughout the country. The 16-foot span also permits the use of a very simple tied-rafter type of truss, readily assembled on the floor and easily lifted into place by two men.

24 and 28 Feet Found Convenient Multiples of 4-Inch Module

In the other direction, it was decided that either 24 feet or 28 feet make convenient multiples of a 4-inch planning module which provides equally for joists and studs at 16-inch and 24-inch centers. It was agreed, therefore, that the units should be 16 feet by 24 feet or 16 feet by 28 feet, depending upon floor area requirements.

From this, any number of larger and more varied combinations suitable to the needs of the individual



Two of the basic units, placed one on top of the other, form this two-story house. Any competent architect can incorporate these economy features into any special design.

buyer can be made. For example, of great popular interest is the L-shaped house, composed of two units 16 by 24 placed at right angles to each other.

In all, the Industry Engineered Housing Program has made a study of five major house types with minor subdivisions of some types into basement and nonbasement categories.

Use of Standard Low-Cost Materials Expected to Speed Distribution

Equally important to the program is the standardization of low-cost materials and equipment items suitable for housing; better distribution of building products through packaging, precutting, and preassembly at the local dealer level; and on-site construction resulting from coordinated design and efficient erection methods.

From such advance planning, large savings are expected. For example, uniform use of standard low-cost materials should result in increased demand for those materials, thus bringing about the benefits of a greater degree of mass production. This, in turn, should mean economies in manufacture and savings in inventories, both at the point of manufacturing and in dealers' yards.

Savings in distribution should arise not only from the lower inventories resulting from standardization, but, also, from the fact that every dealer can afford to keep all of the standard parts in stock at all times. Costly delays in building which result from the need for ordering house parts from the factory and then waiting for those parts to arrive will be greatly reduced. Standardization means a more prompt and steady flow of materials to the job.

Dealers can provide further savings through assembly or "packaging" of materials, mass precutting, and preassembly of materials prior to delivery.

Savings in Time and Materials Realized at Construction Site

The greatest economy undoubtedly will be realized at the construction site. The fact that the houses are dimensioned in accordance with the sizes of the materials used will save considerable time in on-site construction and prevent costly waste of materials. The materials should fit together with little or no cutting because the houses are designed exactly to that end. There will be far less trial and error, less measuring, less sawing, and less cutting of materials with such an engineered house.

To make the most of the savings involved in on-site construction, it is planned to arrange for some research activity in regard to assembly and erection methods. Means of reducing time requirements will be determined by building identical houses in succession and devising means of eliminating waste motion and effort.

More Highly Organized Methods To Benefit Small Builder

In recent years, a few very large operators have developed their own short-cut methods of house erection by organizing sequence operations backed up by carefully synchronized purchase and delivery schedules for component materials and equipment. This type of "know how" and organization has generally not been possible in the operations of the smaller builder, many of whom build only a few houses per year, and who often act as combined foreman, salesman, and manager. On a nation-wide basis, however, the contributions of this group to the total number of houses required are of vital importance. This study, then, has been directed toward placing in their hands a more highly organized method of design and purchase of materials

combined with more efficient erection methods.

One of the most serious problems of the small builder, recently, has been the obtaining of necessary materials at the proper time to permit smooth operation. Generally, the builder's own time has been spent in chasing hither and thither for one item or other, and multitudinous site deliveries of scattered items has inevitably put a penalty of high trucking costs against the job. The Industry Engineered Housing Program is directed toward eliminating such supply problems and giving the smaller builder the benefit of carefully studied job erection methods. While these studies do not preclude the possibility of utilizing large scale prefabricated panels or sections, they are directed primarily toward producing the greatest possible efficiency and economy in the use of commonly available building products.

New Company Members of the ASA

Through their participation in and financial support of the American Standards Association, the following companies are among those that now have an active part in the national standardization program:

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Tennessee Coal, Iron & Railroad Company, Birmingham, Alabama
Union Switch & Signal Company, Swissvale, Pennsylvania
Union Tank Car Company, Chicago, Illinois
Wheeling Steel Corporation, Wheeling, West Virginia
Youngstown Sheet & Tube Company, Youngstown, Ohio

Preliminary Plans of ASA Annual Meeting in October

Sounding the keynote of world interest in the Marshall Plan, one of the country's outstanding authorities on world economic affairs will be the principal speaker at the 29th Annual Meeting of the American Standards Association when members will assemble at the Waldorf-Astoria in New York City, October 21-24. He will highlight a luncheon to be held in the Grand Ballroom on Wednesday, October 22.

Another distinguished guest will address the final luncheon in the Wedgwood Room on Thursday, October 23. On this occasion, too, there will be a report from Frederick R. Lack, president of the American Standards Association and vice-president of Western Electric Company, concerning the progress which has been made in placing the ASA in a position to carry out the recommendations of the Charles E. Wilson Committee as endorsed by the Department of Commerce last year.

Dr E. C. Crittenden, chairman of the Standards Council and associate director of the National Bureau of Standards, will review the technical accomplishments of the ASA for the year 1947 at this same meeting.

Every effort is being made to make this one of the most interesting and valuable sessions in the history of the American Standards Association. It will mark the first time that an ASA Annual Meeting has been used to bring together the personnel of the many correlating committees and sectional committees, in addition to the usual meetings of the Standards Council and the Board of Directors. Meetings of the Mechanical Standards Committee and the Electrical Standards Committee are already planned for Wednesday, October 22, and similar arrangements for meetings are being made by the other correlating committees.

Dictionary for Drawings

Would Guarantee Correct Interpretation

By George E. Rowbotham

Nation-wide agreement on basic principles of drafting would promote uniform interpretation of signs, symbols, notes, and dimensions and thus help in correct fabrication and inspection of parts.

Mr Rowbotham *is project engineer, Fisher Body—Fleetwood Division, General Motors Corporation, and chairman, General Motors Drafting Standards Subcommittee.*

His suggestion for a nationally accepted basic manual of standards for drafting practice, to serve draftsmen as Webster's dictionary serves writers and editors, will be of special interest to standards engineers.

In addition to the general article reprinted from "Product Engineering," INDUSTRIAL STANDARDIZATION *presents an analysis of the work already accomplished on standards for drawings and drafting room practice (page 215).*

Comments on Mr Rowbotham's suggestions will be received with interest.

LACK of definite and clear understanding caused by variances in drafting practices results in many delays, mistakes, and set-backs, also much waste and high cost. Because drawings are often misinterpreted, many parts are made that do not meet intended specifications.

Uniformity in basic drafting practices will do much to promote correct interpretation of production drawings. A nationally accepted basic standard of drafting practice would avoid the occurrence of much waste of material and time.

Drafting standards have been established by several organizations such as the American Standards Association, the military services, and the Society of Automotive Engineers. But a long-range program must be formulated and adopted before a national basic uniformity is achieved.

The fear that such standardization means static crystallization is not well founded. Industry is dynamic. With basic principles clearly defined, an over-all plan of standardization can be set up that is both flexible and adaptable enough to meet new problems as they arise.

The ideal objective is to create a text book of basic standards comparable to Webster's International Dictionary, which has become a standard in America on elements of our language. To be effective, such a book would require endorsement by the national engineering societies and the several large industrial groups.

Drafting practices especially adapted to the individual problems of a specific organization need not be hampered, since these interorganization practices can be included in the scope of the nationally approved basic standards. Experience proves that the use of a manual by an organization means better production of a better product with resultant economy.

The first step is to reconcile conflicting ideas within each type of industry in the same manner that the aircraft engine and accessory manufacturers have established an accepted drafting standard for their work. After each type of industry has established its drafting standard, it will be opportune for the different groups to get together and agree upon basic standards. Each type of industry will join the national body with the full understanding that its tentative interorganization standards will be subject to modifications to bring them in line with approved basic practices. Any material common only to the work of one type of industry can be treated as special and handled by a subcommittee.

Out of the combined cooperative efforts of all these groups eventually will come the first transcript of a master manual. This master manual will be divided into sections, with the main section devoted entirely to basic principles of drafting such as projection, arrangement of view, lines and line work, dimensioning, conventional symbols, and lettering. The divisions would be similar to ASA Z14.1-1946.[1]

The ultimate revision of this transcript will be accepted as a national standard by all types of industry.

NOTE: This article is reprinted by special permission from the July 1947 issue of *Product Engineering*.

[1] American Standard Drawings and Drafting Room Practice, Z14.1-1946.

The subsections, covering special practices common to only one type of industry, will be approved by each of these special groups. Such groups will include farm equipment, instruments, ships, fabricating machines, aircraft engines and accessories, airplane, automotive, automobile bodies, automobile hardware, electrical equipment, construction equipment, and others.

These special subsections will be so devised as to come within the broad elementary provisions embodied in the main section of basic principles. As a result, the various manufacturers will have a drafting guide that will not only meet their own requirements but will be in complete accord with basic principles in current use throughout the nation.

Benefits of Basic Standards

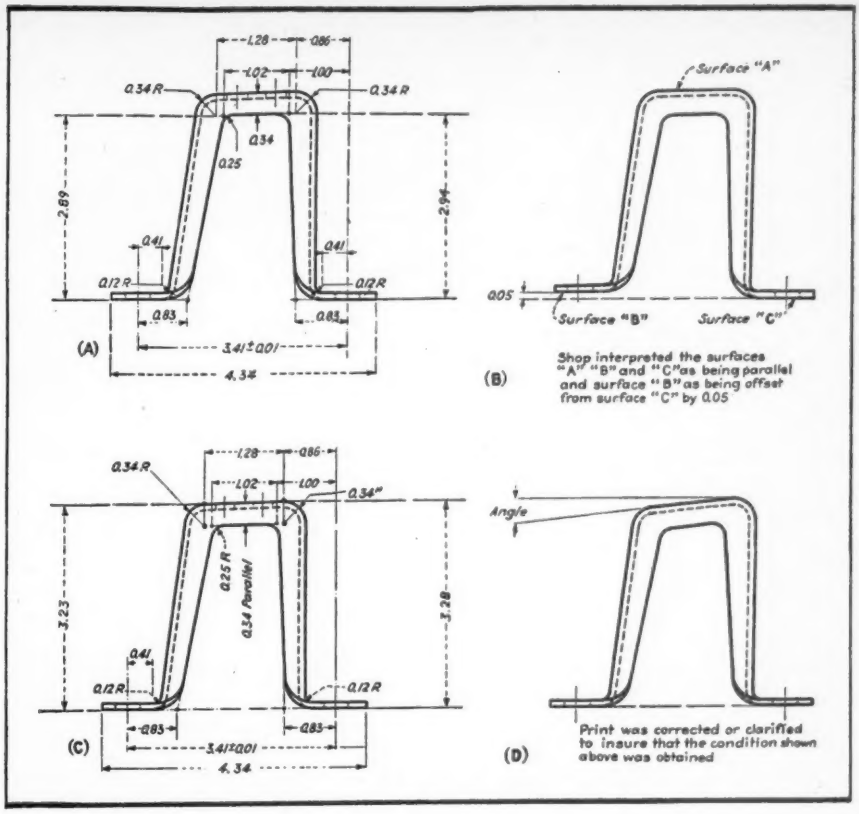
This nation-wide agreement on basic principles will mean a common drafting room language that is understandable to all persons concerned with manufacture, subcontracting, selling, or replacement since there will be uniform interpretation of signs, symbols, presentations, and dimensions. Educational institutions will also benefit, as they will be in a better position to coordinate their mechanical drawing curriculum.

The standard master manual here proposed will have to be designated as the official and final authority in so far as the correct reading of mechanical drawings is concerned. It must be authoritative to the degree that it can be used as a reference in litigations to settle disputes pertaining to the correct interpretation of mechanical drawings. A drawing is a contract, and should be just as binding from an engineering standpoint as any legal document.

Experienced engineering executives agree that standard drafting practice has both merit and value, but some feel that the benefits are evanescent and remote. From a practical point of view, only one criterion can be used to appraise the value of a standard drafting practice, that is, its economic effects.

All the savings and increased profits that accrue from strict observance of a definite standard cannot be included in a short summary, but some of the more important are:

1. Less Repetition of Work. When parts are designed by one concern and manufactured by another, two or more sets of drawings are not necessary. Duplication of effort and repeated research are avoided because prior solutions to recurring problems are available immediately.



Deficiency of dimensions on production drawings is cause of much waste. (A) Original drawing of a formed part. (B) Shop's interpretation of drawing. (C) Corrected drawing. (D) Part as desired by engineering department.

2. Reduces Supervision. Draftsmen do not need step-by-step guidance.
3. Fewer Arguments. Discourages time-wasting disagreements caused by conflicting ideas.
4. Fewer Costly Errors. Establishes a common drafting room language, thus promotes correct interpretation of presentations, dimensions, conventions and symbols.
5. Facilitates Manufacture. Design data shows draftsmen how parts should be designed for economical production.
6. Standardizes Tools and Materials. Insures whenever possible the use of existing tools, gages, standard stock sizes of materials.
7. Insures Interchangeability. Pertinent data are tabulated covering fits, tolerances, and surface finishes.
8. Simplifies Routine. Standardized part names simplify compiling and alphabetical filing of parts lists.

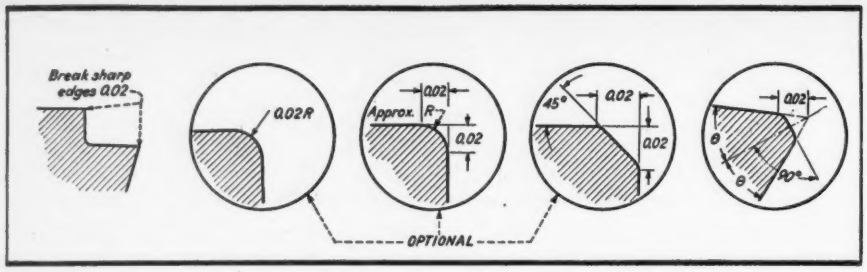
In every organization, problems exist that are peculiar to the work in hand. The writer of a satisfactory interorganization manual must, of course, be well acquainted with the source and solution of such problems.

When highly skilled personnel use the manual, the fact should influence the context of the book. When the personnel is comparatively inexperienced, the presentation should be elementary and detailed. When practicable, even data published in standard reference books should be included.

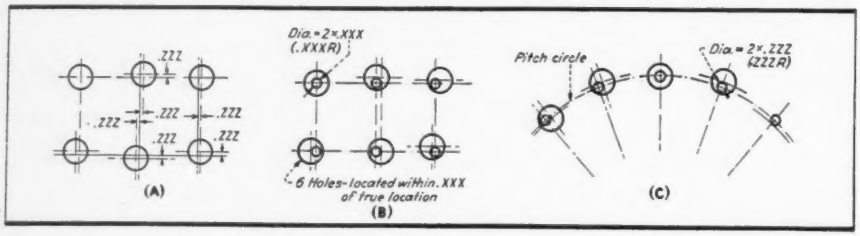
A properly prepared engineering manual should enable any engineer or draftsman to find desired information quickly and easily. The manual should tell how any drafting operation is correctly performed in accordance with approved uniform practice.

In the absence of uniform basic standards, disagreement frequently arises as to how a specific drawing should be made. For example, one engineer might indicate that the location of holes, keyways, or slots, unless otherwise specified, are to be within 0.005 in. of a common centerline; another engineer might indicate that 0.001 in. is the proper tolerance, or that they can vary freely. Such conflicting and sometimes inaccurate statements reflect unfavorably on the efficient administration of the engineering department.

Much uncertainty and lack of agreement on the interpretation of production drawings can be avoided



A sharp edge may be broken in the form of a radius, an approximate radius, or a chamfer, as long as the edge produced is free of burrs and is not sharp.



All holes shown are within the tolerence plus or minus ZZZ of true position.

by standard practices. But often it is almost impossible to indicate on one component production drawing all the dimensions best suited for each particular machining and process operation. And yet, a production drawing should be regarded as completely satisfactory only when it includes all dimensions, notes, and data necessary for manufacturing departments to fabricate the part completely and correctly and to inspect the part.

Dimensions used by manufacturing departments may or may not be the same as those specified on the drawing, but are satisfactory so long as the finished part measures up to the specifications and requirements presented on the drawing. Again, manufacturing departments might decide to use dimensions better suited for performing a special machining operation and constructing tools and gages than the dimensions shown on the drawing. Of course, to do this they would have to understand the requirements of the part from a functional standpoint, and here the uniform standards would play a basic part.

Engineers and draftsmen often disagree on the exact definition of some technical terms. Text books give different definitions and this results in ambiguity. Technical terms originate from necessity when a new symbol is needed for precise meaning. A technical idea may be too complicated to express in common terms, or require too many words if a single symbolic word is not found to express it. This conflict could be standardized by the adoption of a master manual. A section on definitions of technical terms should be included, flexible enough to add new terms as they come into use.

Engineering drawing is the language of a profession, just as mathematics is the language of science. Since engineering drawing consists of the portrayal of ideas by means of lines, words and terms, these elements must convey definite concepts.

Although many concerns in the automotive and aircraft fields have excellent drafting manuals, a close examination will show a lack of system in the writing of drawing notes. It is not practicable to list all drawing notes used by various industries in one volume because of the wide differences in the nature of their respective work. It should be recommended, therefore, that all persons receiving the master manual furnish a list of all their acceptable notes used.

The drawing notes accepted as standard should be listed in three groups:

(1) General Drawing Notes—notes that apply to the part or assembly in general;

(2) Local Drawing Notes—notes that are commonly used and that apply to a local or particular portion of the part or assembly;

(3) Special Drawing Notes—notes not generally used and that are usually limited to one special application. It is advisable to show illustrations of the application and usage of special drawing notes, and thus simplify the task of finding the note required and insure correct selection.

Rules should also be given for writing notes. Notes should not duplicate information recorded in title block or repeat given dimensions. Operational terms, nonessential words, and quotation marks should be avoided.

The Dewey decimal system commonly employed by libraries for indexing, is highly recommended in numbering the manual pages. The basic idea of having a combination alphabetical and numbering system, consisting of both whole and decimal numbers with each paragraph numbered individually using combination numbers, that is, 1A1.01, 1A1.02, 1A1.03, and so on, does away with page numbers thus permitting the addition or withdrawal of material

Abstract from American Standard Drawings and Drafting Room Practice (ASA Z14.1-1935)

"It is not always safe to say that the most used is the best practice, but whenever a definite majority prefers one method and the balance is made up of many small minorities, it may generally be assumed that the best practice is that of the majority. When two or more methods have nearly the same number of followers, the one coming into increasing use by progressive firms has been given preference over one declining in use.

"Each of the variations referred to has its advocates and it is recognized that a good many will be reluctant to change from some method they may be using to another which (to them) seems to be no better, but it is hoped that in the interest of uniformity the adopted standard method of representation may be acceptable by them in spite of individual preference. Only by such concessions can a standard practice become a reality."

without the necessity of changing or rearranging page numbers. The first paragraph of each page is repeated in the lower right or left hand corner of the sheet and considered as the page number. Therefore the first paragraph number and the page number are synonymous, which makes it possible to add or remove any number of pages without introducing any confusion or disrupting the numbering sequence.

ACKNOWLEDGMENTS—The author acknowledges the helpful suggestions and encouraging comments given by C. E. Hilton, staff engineer, American Standards Association; M. L. Stoner, staff engineer, Society of Automotive Engineers; G. F. Nordenholt, editor, *Product Engineering;* and A. J. DeSana, chief engineer, Fisher Body-Ternstedt Div, General Motors Corp.

Some Drawing Standards That Might Be Coordinated in Proposed Basic Manual

American Standard Drawings and Drafting Room Practice ASA Z14.1-1946—

Sponsored by the American Society of Mechanical Engineers and the Society for the Promotion of Engineering Education, the 1946 revised edition of this standard was approved by the American Standards Association late last year. Since approval of the first edition in 1935, it has been used as the guide for preparing many individual company manuals, and has been heartily endorsed by authors of outstanding textbooks on mechanical drawing. It is based on work started as far back as 1914 when the American Society of Mechanical Engineers approved and published the report of its committee on Standard Cross Sections. The question of preparation of a formal national standard for drawings and drafting practices was presented to the ASME Standards Committee in 1925, prompted by the demands of interested individuals, notably teachers of mechanical drawing. The ASME committee, thoroughly convinced that a great need existed for such a standard, requested the American Standards Association to authorize the organization of a nationally representative committee. The ASA committee set up as a result of this request made an extensive survey of practice in the United States by means of correspondence and questionnaires, and studied in detail the reports of several national standardizing bodies of other countries. The standard proposed as the result of this work was approved in 1935.

It established third-angle projection as standard, and included such subjects as Arrangement of View, Lines and Line Work, Sectional Views, Screw Thread Representation, Dimensioning, Notes, Trimmed Sizes of Drawing Paper and Cloth, Titles, and Lettering. A revision which included a number of changes and many additions was approved in 1946.

American Standard Abbreviations for Use on Drawings, Z32.13-1946—

Two thousand terms used on drawings have been given standard abbreviations in this recently completed document, prepared under the sponsorship of the American Institute of Electrical Engineers and the American Society of Mechanical Engineers. The abbreviations were based on thorough-going surveys made by a committee which had been working on a proposed war standard to coordinate practices of industry and the Armed Forces. Although this war standard was never completed, the work done in preparation for it was turned over to the sectional committee and used in completing the peacetime standard.

American Standard Graphical Symbols for Use on Drawings, Z32—

A series of standards covering graphical symbols used in various technical fields has been completed by the committee which prepared the American Standard Abbreviations. This committee works under the sponsorship of the American Institute of Electrical Engineers and the American Society of Mechanical Engineers. Standards already completed in this series cover symbols for: welding; use on drawings in mechanical engineering; electric power and control; telephone, telegraph, and radio use; electrical symbols for architectural plans; electronic devices.

SAE Aeronautical Drafting Manual—

The Society of Automotive Engineers' manual was prepared as a result of requests for the Society to reconcile the technical differences which existed between the drafting manuals used by the different aircraft engine manufacturers. Scores of differences were adjusted in the numerous meetings of subcommittees and through the correspondence between representatives of the various manufacturers. Early in the work, the committee gathered all the company manuals and made a detailed study of them. The best elements in each company manual were included in a preliminary draft which was sent to a large number of other manufacturers for comment and criticism. The original manual included data on arrangement of views, lines and line work, sectional view, dimensioning, screw thread representation, lettering, and drawing sheet sizes, and arrangement, dimensioning by the decimal system, uniformity of drawing sizes, accordion folding of blueprints, arrangement of number blocks, standardized symbols for cross sectioning, a uniform system of symbolized general notes for concentricity, parallelism and circularity, case hardening, standard definitions, decimal designation for material.

A more complete edition was issued in July 1946. The work of revision was

(*Continued on next page.*)

Drafting Practice Not Trade Secret

"In a good many trades and professions," Mr Rowbotham has commented to the American Standards Association, "there are persons who seem to believe that their security in their jobs depends on keeping trade secrets. Simplify trade secrets and they fear it will detract from their personal value to the organization. By the same token, writers could be denied the use of a dictionary and thesaurus on the assumption that anyone can write when these reference books are available to all. So, the fear that standardization will detract from a good man's value to his company is foolish indeed."

The committee responsible for a nationally acceptable basic drafting manual should have special qualifications, Mr Rowbotham believes. To do an acceptable job, he says, "the personnel chosen for this pioneering work must be 100 percent sold on the advantages of standardization."

Each member should, he declares, "have a sound engineering background and the ability to express his ideas in writing. He should be familiar with tooling, cost, stocking, inspection, manufacturing problems, and engineering design practices. He should be conversant with the work being done by national standardizing organizations."

Finally, in Mr Rowbotham's opinion, this "textbook of basic standards" should be approved by such leading organizations as the Society of Automotive Engineers, Inc, the American Society of Mechanical Engineers, and the Society for the Promotion of Engineering Education. It would also, Mr Rowbotham declares, require the approval of the American Standards Association, which indicates a national consensus of the various national associations concerned.

divided into 37 separate projects and each of these was developed vertically by consultation with both producers and users. As a result, the revised manual contains a more detailed treatment of abbreviations, definitions, and dimensioning than did the old manual. It also includes new sections on forgings; springs; splines, and finishes.

At its meeting in October 1946 the SAE Technical Board voted to organize a committee to extend this work to the automotive field by preparing a new SAE Automotive Drafting Practice Manual.

JAN-STD-2, Drawing Sizes, and JAN-STD-12, Abbreviations for Use on Drawings—

These are the first two standards to be approved in a series of drafting practice standards now under development by the Army-Navy Joint Specifications Board to unify the drafting practices of the War and Navy Departments. These standards are mandatory for use by the services and bureaus of the two departments. Copies of these JAN standards are being sent by the Army-Navy Joint Specifications Board to the American Standards Association for consideration by sectional committees working on similar standards in order that the standards developed by sectional committees for use by industry and standards used by the government may be as closely coordinated as possible.

Can *Factory Painting* Be Effectively Standardized?

By Carleton B. Ryder

At the time the work described in this article was done, Mr Ryder was Coordinator of the Apparatus Appearance Design Section of the General Electric Company. The article, "Can Industrial Color Finishes Be Effectively Standardized?", which attracted considerable attention when it was published in the July 1945 issue of INDUSTRIAL STANDARDIZATION, was written by Mr Ryder and Donald L. Hadley, then Design Consultant for the Westinghouse Electric Corporation, coauthors. It was a report of parallel studies made by both Westinghouse and General Electric to reduce the number of grays then in use on industrial and machine products and at the same time to bring about greater economy and to improve appearance. The present article is a sequel to the earlier one, inasmuch as it is a discussion of similar work extended beyond the use of standard grays into the use of color and from the industrial product into the painting and lighting of the complete industrial interior. Since completion of the work described here, Mr Ryder has joined his former collaborator to become Executive Director of the industrial design firm of Hadley, Ryder, and Pedersen.

In Two Parts—Part I

THE planned use of color to improve worker efficiency and morale has been urged by almost every large paint manufacturer in recent years. Yet no two have recommended the same colors. If the ends are the same, why should the means differ? This is the question everywhere asked by factory management and maintenance men. There is justice in the question. And a fair answer is: In spite of their superficial differences, all these factory painting proposals have sufficient in common to make standardization distinctly feasible.

This may sound excessively optimistic to industrialists who have been confused by the apparent lack of agreement. The principal purpose of this article is to show how analytical methods can be applied to settle this so-called "aesthetic" issue. Our conviction is that such subjects must be brought down from the level of "art" to that of tangible data before any comparative appraisal can be made. So this article is purely an account of surveys and analyses.

The Situation

Before the war the General Electric Company had begun to try out proposals for the use of color. Improvements in worker morale, as well as in "good housekeeping," were recorded, but long before these improvements could be evaluated it became evident that difficulties would develop from the use of color that could easily outweigh the advantages. These were: first, coding conflicts; second, readjustment losses with employee transfers; and third, lack of appearance coordination.

Most important is the first—the possibility of conflicts between the colors used for decoration and the colors used for coding. This conflict may arise not only in such critical applications as those specified in the American War Standard Safety Color Code for Marking Physical

Hazards, Z53.1-1945, but also, and much more frequently, in connection with the unstandardized colors used to code controls, valves, piping, conduits, conveyor hangers, bins, etc. The conflict arises less from the danger of using the same color both for coding and for background than it does from the fact that the same coding color may seem different when seen against backgrounds of varying contrast. For instance, our memories might readily fail to distinguish between an orange seen against a greenish background, and a red against a warm tan background. Color is so telling in its effect that, if one comes to rely upon its meaning at all, one may soon depend upon it almost instinctively. Under such conditions the confusion cited above could conceivably prove dangerous. Speed of seeing gives undeniable merit to the use of color for coding; therefore its practice must be inviolate. Nothing can be permitted to compromise its function, as unstandardized variety of background colors might do.

Psychological Difficulty

The second difficulty appears in the form of psychological dislocation of the employee when transferred, not merely from one operation or one plant to another, as often occurs in large companies, but also, and of more general interest, when shifting from one company to another. For example, if a worker becomes adjusted to color surroundings that give him a "lift" and then he moves to a new position where functional color either has not been applied at all or has been differently applied, the worker will suffer a period of readjustment involving distraction from his work. This will consequently result in temporarily reduced efficiency, depending upon the color sensitivity of the individual. A change as usual as that from green walls to buff might have this effect. Even though it were too slight for conscious admission and the net effect only a matter of conjecture, in large companies, where such changes are constantly going on, the gross loss to production might prove formidable if it could be measured. It must be borne in mind that the gains as well as the losses resulting from the effects of color upon a worker can rarely be individually measured. It seems easier to avoid this difficulty through standardization than to measure it.

The third difficulty is the least important, although the most obvious. It is the "patchwork" appearance that results from uncoordinated application of different color systems in the same or different plants. Yet with the claims of one recommendation intrinsically as good as those of another, what ground is there to regiment the individual decisions of men individually responsible for factory painting and maintenance? Plant management also proves reluctant to repaint new machines and apparatus for the sake of industrial interior decoration, particularly at this time when there are indications that machine product colors, grays at least, may eventually be standardized. (See INDUSTRIAL STANDARDIZATION, Vol 16, No. 7, p 151-154 [July 1945].) So it would seem likely that the general use of color would result in still more patches added to the prevailing "patchwork."

Under sales pressure brought to bear by advocates of functional painting, the cries of our factory people for advice and guidance became acute. And the warnings of product-finish people were particularly acid. The situation was one demanding immediate clarification to avoid chaos that would discredit any functional color system, however sound. Consequently, at the war's end, a joint program was started within the General Electric Company to seek an answer. Having previously participated in studies on gray standardization, the Apparatus Section of Appearance Design, directed by Ray Patten, took the lead, supported by the Lighting Research Laboratory under the direction of Dr Matthew Luckiesh, the Resin and Insulation Materials Division, engineers of "Glyptal" finishes, the Spectrophotometric Section of the General Engineering and Consulting Laboratory, the Finishes Committee, and the Standards Division of the Executive Department.

Development

The outcome of this program is a composite color system using what was considered the best in each of the most important paint manufacturers' proposals. It comprises eight colors derived from the hundreds recommended for floors, walls, ceilings, machines, equipment, and furnishings of factory and office, working and recreational areas. These eight provide either warm or cool color schemes as desired. Each meets requirements of proper lightness, or percent reflection factor, for every application. Each insures safe contrast to the established safety coding colors, and allows for use of a limited number of other noncritical coding colors. The system is foolproof in any hands because the balanced relation of any one color to all others in the system precludes color discords. It has enough variety to avoid monotony—the eight colors, plus white which is permissible for ceilings, yield 192 different combinations. This is sufficient variety to give interest in recreational areas such as rest rooms, cafeterias, auditoriums.

But the most important point is that these eight are the simple, mathematical average of the hundreds from which they are derived. Such averages, resulting from extensive surveys and analyses, are the mean of many preferences. They represent the "likes" of the majority.

Although this work was initiated as a company project, it will be seen from the foregoing that it is designed to answer questions that could arise almost anywhere in industry. If a commonly acceptable answer can be found, it can be of greater advantage to all industry than a less widely accepted solution would be to a single company or even to a few companies.

So the following report of the methods adopted in the General Electric Company's study and the results obtained is offered for what it may be worth to any other company, or to industry as a whole, for it is felt that it offers a basic approach to standardization in its field.

Surveys of Proposals

The first step was to make systematic surveys of existing proposals for the use of color in factory painting. It was immediately noted that, while these had pretty much the same objectives in common, there was little conformity between the systems in the emphasis placed on various factors. Some headlined objectives to which others gave little weight. Obviously, in cases where there are many facets to the over-all advantage, they will not be of equal importance. The true relative importance of each factor, or objective, must be determined and each given its due before a system can be considered balanced or comprehensive.

Therefore, these existing systems were studied and an inclusive list of their aims prepared. An estimate of the ideal relative importance of each

REQUIREMENTS OF A FUNCTIONAL COLOR SYSTEM FOR FACTORY PAINTING

Subject headings are arranged in the order of their importance to the whole idea of functional painting. Subtitles are arranged in order of their importance in relation to the headings.

Table 1. General Over-All Summary of Factors to Be Considered in Setting Up a Functional Color System

A. WORKER FACTORS

The system should:

1. Reduce accidents. *
2. Improve workers' efficiency. *
3. Improve quality of workmanship. *
4. Facilitate maintenance work. *

B. PRACTICABILITY FACTORS

The system should:

1. Be adapted to standardization.
2. Be complete and thorough.
3. Be practical in notation and specification.
4. Be simple.

C. COST FACTORS

The system should:

1. Be economical to apply and maintain.
2. Reduce lighting costs through maximum light utilization.

* These factors are expanded and presented in greater details in Table 2.

Table 2. Technical Aspects of Worker Factors (Table 1, A) To Be Provided for in Setting Up a Functional Color System

A. SAFETY FACTORS

The system should reduce hazards, improve safeguards, speed up use of first aid and emergency facilities, provide for noncritical coding. It should:

1. Have the universal recognition of standardization.
2. Use "attention value" of color for warnings.
3. Use "attention getting" colors for identification.
4. Use recognized color associations in coding.
5. Code with symbolic forms as well as color to offset color-blindness risks.

B. MORALE FACTORS

The system should improve the worker's will to work and his enjoyment in his work. It should:

1. Stimulate better "housekeeping" by lighter colors.
2. Provide more cheerful brightness levels for work.
3. Stimulate better sanitation by brighter lighting.
4. Appeal to worker's color preferences.
5. Provide "lift" through color variety.
6. Provide lower restful lighting in relaxational areas.
7. Provide "naturalness" of brightness level ratios.
8. Provide interesting color relief in relaxational areas.
9. Provide "naturalness" of color environment.
10. Use color associations to advantage.

C. EFFICIENCY FACTORS

The system should improve worker's output through better seeing conditions. It should:

1. Provide adequate brightness of task and all surroundings.
2. Support maximum brightness contrasts in the visual task.
3. Employ colors to support proper brightnesses.
4. Minimize brightness contrasts between visual task and surroundings.
5. Provide color contrasts for positive task visibility.
6. Provide colors adapted to types of work or lighting.
7. Employ colors to control eye travel.
8. Suppress contrasts between task surroundings and rest of field.
9. Employ color to reinforce stereoscopic appreciation.
10. Employ color compensation for "after-image" induction.

D. FATIGUE FACTORS

The system should assist in reduction of visual and consequent physical fatigue. It should:

1. Avoid inadequate illumination.
2. Avoid glare or misplaced or excessive brightnesses or reflections.
3. Avoid undesirable color illusions.
4. Avoid color monotony.
5. Avoid extreme hue contrasts in or close to the visual task.

aim to the whole idea of functional color was made and stated in percentages, and these aims were assembled in their order of importance. Next, the existing systems were each compared to the ideal and their merit rated accordingly. The resulting totals provided an interesting comparison of systems. While this method of numerical rating is admittedly arbitrary in unit, nevertheless the factor of error becomes negligible in the larger total appraisal of a composite system. It provides a working method of putting intangibles on a quantitative basis. Over- and under-valuation are ruled out and all are judged alike.

Since it has been our purpose to develop a composite system, and not to grade existing systems, and since the numerical ratings are of no further value once the order of importance is established, they have been dropped in the list of aims given in the tables. Arrangement is in decreasing order of importance. Table 1 is a general over-all summary of requirements for any system of functional color in industry. Table 2 is a detailed breakdown of the starred items in Table 1, and serves as a guide for the handling of more technical aspects. It should be noted that the starred items of Table 1 do not directly correspond to Table 2 headings, but are derived by a careful process of blending and weighting.

The whole study of objectives was lengthy but fruitful. It yielded a

strong framework upon which to build the composite system. It changed opinions into values, spotlighted neglected points, and washed out false impressions. In our opinion it put the finger on any effort to sell more paint and more frequent repainting than were actually needed. Fundamentals previously taken for granted and forgotten were distinctly silhouetted as the prime things to remember.

The first of these fundamentals is that the subject of functional color cannot be confined solely to color. Color is subordinate to lighting in all cases except in coding for safety, which has to lean heavily upon standardization. The simple fact is: there is no color without light. It makes no difference how the machine is painted if one cannot see the work. It is not implied that color can be slighted—it has its proper place and importance—but the tendency is vastly to overrate its importance. Effective color depends, first, upon effective lighting.

Next, the safety, efficiency, and morale of the worker have first claim upon the system. But all such "worker" factors do not outweigh combined factors of practicability and cost. In other words, the employee will respond to planned color by giving more, more cheerfully, up to the point where he has to pay for it. The direct, plus indirect, costs of expedience, application, and maintenance must not exceed the gains.

Third, expedience, practicability, ease of application, thoroughness, are only less important than the "worker" factors. Expediency is more important than direct costs. Usefulness depends largely upon widespread acceptance through standardization.

Fourth, the direct costs of application and maintenance form, by a small margin, the least important of these three broad groups of factors. And an important part of the cost picture is the economy which results from better utilization of illumination as the result of the use of lighter paint.

Finally, certain factors have received too much attention in some proposals. Typical are: (1) the advantageous use of color associations, (2) color practices compensating for "after-image" induction, (3) the use of color adapted to, or compensating for, color of illumination, and (4) color contrast between the task and its background. These last two deserve special comment.

Whether paint color should be selected according to color of light can be argued either way. On the one hand it is urged that areas lighted by cold northern light should be painted in warm colors, and on the other hand just the opposite is urged. According to the second viewpoint this will only tend to neutralize both the light and the color. It is sometimes reasoned that where the work is heavy and temperatures high, color should suggest coolness; where work is light and temperatures normal, warm colors are agreeable, irrespective of color of light. At first glance there seems to be little choice between the two arguments, but on closer inspection of the writings of Dr Luckiesh and others, it is noted that males show a slight preference for cool colors like blue-greens as opposed to female preference for warmer, reddish tones. The heavier tasks, calling for cooler colors, are usually performed by the male workers who prefer these colors. These findings tend to favor the selecting of color according to work rather than light. But numerous exceptions advise against the emphasis of either approach to the exclusion of the other.

The most prominent misconception is that parts of the machine against which the work appears must be painted in hue contrast to the work. The argument is sound but its application is generally impractical, as extensive study of types of work and machines, benches, or desks shows. Most machines place the work on a metal platen or table, which cannot be painted. Paint would soon be worn off the wood surface of some others. Surfaces outside the immediate background might be painted in contrast, but then it is obvious these either do not serve as background, or present a broken surface of irregular shapes and shadows offering a confused background at best. Under such conditions, painting in contrast to the rest of the machine places contrasts beyond the area of concentration and distracts the eye from the work. There is little excuse for applying the theory to desk tops where the usual task is white paper. This leaves only bench tops to which the theory can be generally applied when linoleums or laminates withstanding abrasion, dirt, and discoloration are available. We are forced to conclude that it is only practical to keep or finish such surfaces as near to the 35 percent RF (Reflectance Factor) recommended for visibility as possible. Color contrast can be relegated to the exceptions where it can be really applied to the actual task background.

Their rating method also told the General Electric investigators how much improvement over existing systems could be reasonably expected of the composite color system and where the improvement was most needed. The broad aspects, the "money makers," are all well covered by one or another of the existing proposals. By taking the best from each, the result would come within about 7 percent of realizing a satisfactory ideal ("satisfactory" implying some 90 percent of theoretical perfect). While this composite would be appreciably better than any individual system considered, it was evident that in order to realize that last seven percent, the fine points, principally of color and color psychology, would need more attention. Specifically it was found that (1) more completeness and thoroughness of system, and (2) greater standardization than is now provided by any single system would be needed if functional color is to yield its maximum benefits. The following summary lists these two prime needs followed by other factors, taken from Tables 1 and 2, that also need greater attention. These are listed in the order of their decreasing importance.

Factors Most Urgently Needing Attention

From Table 1

A more complete and thorough color system:

Improvement in worker efficiency,
Reduction in accidents,
Economy of application and maintenance,
Facilitation of maintenance work
Simplification,
Practical notation and specification.

From Table 2

Greater standardization of safety color coding and other color coding:

Suppression of unwanted eye travel by color control,
Avoidance of glare or misplaced excessive brightnesses,
Lower relaxational lighting in recreational areas.

(The methods of determining specifications for the colors to be used under different conditions and the conclusions reached will be described in the installment next month.)

Safety for BAKERY WORKERS

By
Armand Hecht
and
Peter Pirrie

New York Public Library Picture Collection

First national safety code for protection of bakery workers is the most recent milestone in the long history of breadbaking

THE ancient Egyptians who first organized breadbaking as an industry could hardly have foreseen the two billion dollar business of today—a business ranking second among all food manufacturing industries of the country. In our own time, it was not many years ago that it was considered a reflection on a woman's homemaking talents if she bought bread from a baker. Now it is considered a necessity. This unprecedented revolution in housekeeping practices is reflected in the fact that in 1900, 95 percent of all breadbaking was done at home—now in 1947, 85 percent is done by professional bakers.

Hazards, As Well As Benefits, Accompany Large-Scale Operations

Industrialization of breadbaking—said to save every homemaker at least two weeks time in every year—has brought with it the obvious advantages of large-scale operations, but it has also brought some of its problems. Flour elevators, large-scale dumpbins and blenders, huge sifters, slicing machines, and mechanical dough mixers were unknown in the home kitchen. As in the case of any high-powered machine, their use may result in serious injuries unless they are properly guarded. Without adequate safeguards and careful training of operators, hands may be caught in mixers, men cleaning flour bins may be smothered by flour dumped on them, fingers pushing the last loaf of bread into a mechanical slicing machine may be cut, ovens may explode.

Increase in Bakery Accidents Spurs Industry to Action

Although the food industry, in which the statistics for bakeries are included, ranks rather low on the list—twenty-fourth among all industries in accident frequency and twenty-third in severity—the fact that bakery accidents have been on the increase recently has given responsible officials in the bakery industry considerable concern. As a result, in 1943 they decided that something should be done to decrease accident hazards in the bakery industry, and that the industry itself should take the lead.

In studying their problem, the bakery officials realized that attempts at reaching a common solution of their safety problem might be complicated by the fact that, unlike other large industries, breadmaking is not centered in a few huge plants but is done in a large number of medium-size and small bakeries scattered throughout the country. Large or small, all bakeries have much the same safety problems, but variations in state safety requirements at times complicate the solution of these problems unnecessarily. State authorities, attempting to lower the accident rate in their own communities, have been known to put into effect rules for guarding machinery that differ from regulations in neighboring states. Such differences make it impossible for equipment manufacturers to fit out their machines with satisfactory safeguards at the time they are manufactured.

Bakery Engineers Request That ASA Organize Project

As a means of protecting bakery workers and improving the safety record in the bakery industry, the American Society of Bakery Engineers took the initiative in 1943 to develop a safety code that could be put into effect uniformly throughout

the country. The work was started by the late Fred Moore, at that time chairman of the Safety Committee of the American Society of Bakery Engineers. At the request of the Society, the American Standards Association called a conference of the groups concerned, who decided that the work was needed and recommended that the ASA organize a project. This was done, a sectional committee was organized representing bakery technicians, equipment manufacturers, retailing groups, insurance groups, accident prevention groups, and the government regulatory authorities themselves. The American Society of Bakery Engineers took over the duties of sponsor.

The work of this committee has now culminated in a new American Standard Safety Code for Bakery Equipment, Z50.1-1947, which provides a guide for regulatory authorities, bakery equipment manufacturers, and for bakers themselves. Use of the new standard is voluntary but it is expected to bring about adoption of uniform regulations which would make it possible for bakery equipment manufacturers to build into their machines the safety needed for the protection of bakery workers and for the protection of the equipment.

Eight subcommittees were given the responsibility for preparing safety recommendations for the special divisions of the industry into which the proposed code was divided. These covered:

- Wrapping and slicing (slicers, wrappers, dividers, rounders, moulders, and proofers)
- Ovens (including both explosive and mechanical hazards)
- Mixers
- Dough brakes
- General equipment and bread-handling equipment
- Biscuit and cracker machinery
- Electrical equipment
- Flour-handling equipment

One of the questions raised during the organization of the work was whether sanitation should be included. On the theory that it is an accident when foreign substances appear in bakery products, it was suggested that recommendations on sanitation should be part of the proposed American Standard Safety Code. It was found, however, that this would involve bringing an entirely different group of people into the work of the committee, people who had no specific interest in the safety of the operator. Also, it was found that the study of methods of providing sanitary conditions through design of bakery equipment was so new that it would be difficult to reach any uniform recommendations. The committee decided that the design and use of bakery equipment to assure good sanitation should be considered by a separate group, and that consideration of the problem would probably have to wait until more is known on the subject.

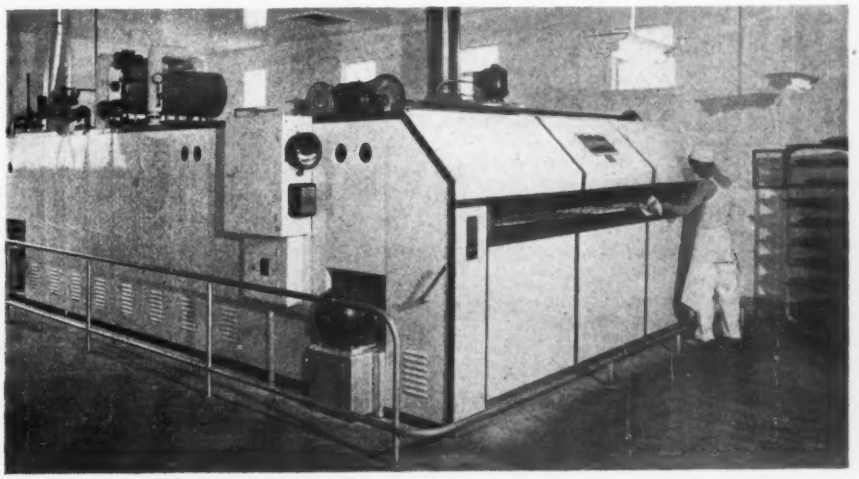
Armand Hecht, *Hecht's Bakery, Bristol, Tennessee, and* ***Peter Pirrie,*** *editor of* Bakers Weekly, *are chairman and vice-chairman, respectively, of the Sectional Committee on Safety Code for Bakery Equipment and represent the American Society of Bakery Engineers on the committee.*

One phase of sanitation legitimately comes under the heading of safety, however. That is the cleaning of the bakery equipment. Cleaning jobs can be hazardous, particularly if a second person throws a switch starting a machine in which another person is working. Some of the references in the new American Standard, therefore, have a bearing on sanitation, in that they attempt to simplify the cleaning jobs in order to permit more cleaning of the equipment with greater safety. Although sanitation was not included as a part of the safety code, it was a definite policy of the committee to encourage greater sanitation and not to include any recommendation that would make an operation less sanitary.

Following this principle, the standard provides that metal, which is more easily cleaned than wood and does not splinter, should be used. In order that this definite requirement will not prevent technical advancement in the industry, there is also a provision for the use of "other non-splintering material." These requirements are included because it is recognized that in the future bakery equipment will have to be taken apart for cleaning more frequently than in the past and wooden units may splinter when repeatedly unscrewed and opened. Splintering was recognized as both a safety and a sanitation hazard, as splinters may be dangerous to the operator and also may fall into the baking materials. Wood is permitted, of course, in the case of existing equipment.

Prime Consideration of Standard Is Safety to Bakery Worker

The prime object of the new standard is safety to the worker. This was decided after four factors had been carefully weighed: safety of the operator; danger to the machine; simplification of the guarding devices; and cost. The committee tried in all cases to work out a satisfactory balance among the four factors, but with the operator's safety given top priority in all cases. In a few instances, it may be that in carrying out the prime object of providing safety to the worker. safety to the machine has actually been sacrificed.



Unless well guarded, most of the gas-fired or oil-fired ovens used by modern bakeries may be subject to fire and explosion hazards. Noteworthy recommendations on this subject have been included in the standard by the committee.

In addition to the representatives of bakers' associations and bakery engineers, the groups that prepared the new safety code included equipment manufacturers, government labor officials, accident prevention groups, insurance companies, and departments of the federal government. Members of the committee are:

Armand Hecht, American Society of Bakery Engineers, *Chairman*

Peter Pirrie, American Society of Bakery Engineers, *Vice-Chairman*

Henry G. Lamb, American Standards Association, *Secretary*

American Bakers Association, *H. Edward Hilderbrand (alternate)*

American Hospital Association, *Dewey H. Palmer*

Associated Retail Bakers of America, *John Benkert; Frank G. Jungewaelter (alternate)*

American Society of Bakery Engineers, *Armand Hecht; Peter Pirrie; Richards J. Conly (alternate)*

Bakery Equipment Manufacturers Association, *E. J. Lauterbur; M. Robertson; D. W. Smith*

Biscuit and Cracker Manufacturers' Association of America, *H. O. Mercier*

International Association of Government Labor Officials, *George P. Keogh*

International Association of Industrial Accident Boards and Commissions, *Joseph A. Haller*

National Association of Bakery Sales Managers, *A. W. Lowenberg; Harry N. Brown (alternate)*

National Association of Mutual Casualty Companies, *L. A. Faulkner; Ben Kendall (alternate); J. C. Stennett (alternate)*

National Bureau of Standards, U. S. Department of Commerce, *Stewart J. Owens, Jr; J A. Dickinson (alternate)*

National Conservation Bureau, *James L. Keane*

National Electrical Manufacturers Association, *J. C. Fink; W. R. King*

National Safety Council, *R. C. Haven; Harold E. Dato (alternate)*

U. S. Department of Labor, *William F. Schnitzler; Gilbert Mann (alternate)*

U. S. Department of Labor, Division of Labor Standards, *R. P. Blake*

U. S. Navy Department, *Bureau of Ships* (Code 350)

U. S. War Department, *H. H. Howie; Herman B. Levitz (alternate); C. F. Heslep (alternate)*

Copies of the American Standard Safety Code for Bakery Equipment, Z50.1-1947, are now available at $1.00 per copy.

Cost came last in the consideration of the committee, but it was not overlooked.

One difficult problem arose when it turned out that in a few cases adequate safeguards for a piece of equipment would require cumbersome and unwieldy guards. From past experience it was recognized that such cumbersome equipment would sooner or later be removed from the machine by the operators who found their work made slower and more difficult because of it. This would be as bad as though no safety device had been provided. In these few cases, therefore, the committee decided to recommend guards that were not as effective as might be desired in order to obtain guards that would be used. The committee believes that in all cases the guarding suggested is practical and usable and does not materially reduce the usability of the machine.

Safety Devices Already in Use Recommended in Standard

The committee relied heavily on the work already done by the industry in protecting the more hazardous machines. Horizontal dough mixers and dough brakes are particularly dangerous and a great deal of work has been done in the past to provide satisfactory protection for them. This work has been adopted by the committee, and in general the safety devices already in use have been recommended in the new standard.

The growth and improvement of the industry was given special consideration, lest any provisions of the new standard act as a brake to engineering research and development. For this reason, the provisions of the standard have been put on a performance basis rather than as engineering or design specifications.

In one case the committee sidestepped a problem. This was in the case of requirements for a suction-type hood to reduce the dust hazard. The committee attempted to determine how large a dumpbin should be before a suction-type hood should be required, but found this to be impossible. Because a mandatory requirement might be a burden to many small bakers, the word "should" was used to indicate that suction hoods are desirable, and the mandatory requirement was eliminated.

The recommendations on ovens are particularly noteworthy. Most of the ovens used by bakeries today are either gas-fired or oil-fired, and unless well guarded may be subject to fire and explosion hazards. Manufacturers of good ovens have been providing safety devices to prevent explosions but at the time the committee started its work very little written information was available on methods of providing safety for ovens. The subcommittee on ovens under the chairmanship of E. O. Engel did an original job in compiling data that had never been collected before. The extent of this work can be judged by the fact that originally the report was 50 pages long, and was rewritten twice before being submitted to the whole committee.

Standard Covers Minimum Safety Requirements for Bakeries

These are only an indication of the type of material included in the standard. In general, it covers the safety problems encountered in the bakery industry, with the exception of accidents outside the plants due to operation of delivery trucks and automobiles.

The standard provides minimum safety requirements for the guidance of local regulatory officials and for use as a standard by equipment manufacturers as well as buyers and users of bakery equipment. Use of the standard is voluntary, but after the effective date it is recommended that all new equipment comply with its provisions and that all old equipment be modified to bring it into compliance. Some leeway is permitted on old installations to prevent undue hardship on the bakery owner, but it is not intended that a baker who has had a hazardous piece of equipment unguarded for many years should continue to endanger the lives of his workers.

Much of Present Equipment Requires Special Guards

It has to be recognized that at the present time much bakery equipment has been designed without adequate safeguards and hence the guarding has to be done as a separate operation in the bakery by attaching special guards and the like.

This means that for over-all efficiency as new machines are brought out, the guards and other safety features will be designed as an intrinsic part of the machine. This will lead to greater over-all efficiency. While the cost of the integrated, thoroughly guarded machine is bound to be greater than the unguarded machine,

the total over-all cost will be less.

The history of machine tools presents an analogy. Such tools used to be driven by belts from shafts. Now they are driven by built-in motors which are an intrinsic part of the design of the tool. This has led to large savings in the over-all cost of operation of machine shop practice. But the analogy goes further. Some 25 years ago, many machine tools were not properly guarded and extra guards had to be added. Such safety features are now built into the machine tool as an intrinsic part of the design. This has again led to a definite over-all economy in machine shop operation.

As a further analogy, it may be recalled that in 1914, the automobile industry sold electric starters, electric lights, bumpers, windshield wipers, electric horns, safety glass, and four-wheel brakes as "extras." Today all of these are by definition mere parts of the automobile which one buys. Again, the over-all cost to the automobile owner is less both in first cost and in operation.

It is expected that engineers in the bakery equipment suppliers industry will be fully equal to those in the machine tool and automobile fields and that as time goes on they will be able to supply new bakery equipment with built-in safety devices at a minimum cost.

Smith Chairman of X-Ray Committee

Dr Scott W. Smith has been appointed chairman of the ASA Sectional Committee on Industrial Use of X-Rays, Z54, in place of George Singer who died in January. Dr Smith was a member of this committee during its preparation of the American War Standard and is still familiar with its program.

Dr Smith has also been a member of the X-Ray Section of the National Bureau of Standards since January of this year and is in charge of its program on x-ray equipment and industrial radiation hazards. He is, however, not chairman of this section as it was mistakenly reported in the June issue of INDUSTRIAL STANDARDIZATION. The Chief of the Bureau's X-Ray Section is L. S. Taylor, who has held that position since the section was established.

New Laboratory Dedicated To Greater Safety From Fire

Equipped with modern fire protection devices, this part of the FIA Laboratory is used to show the operation of various engine-driven fire pumps.

THE most recent development in the war against fire in factories was taken last month when the Factory Insurance Association opened its training laboratory at Hartford, Connecticut. At this laboratory, which is equipped to demonstrate all of the most modern and efficient fire protection equipment, inspectors of the Association will be given a course in the principles of fire prevention and fire protection, and in the construction, application, operation, and testing of fire protection devices. Application of the requirements of fire protection standards and codes will be part of the training course.

The Association explains that its new Fire Safety Laboratory will be available not only to interested people of organizations associated with the FIA in services to policyholders, such as rating and inspection bureaus, general service groups, etc, but is also open for the use of public fire departments and other fire protection organizations. It is expected, however, that the greatest use will be by FIA inspectors coming in for refresher courses and new inspectors beginning extensive training.

One of the features of the new laboratory is its explosion hazard analysis. Explosions of combustible vapors, gases, and dusts are an ever-increasing potential hazard in industrial plants, the FIA explains, and, therefore, the Laboratory has been equipped to make detailed studies of this phase of fire protection. Equipment is available for determining the explosion pressures produced by the ignition of combustible dusts suspended in air. This equipment is expected to help the ASA sectional committee on dust explosions, and other committees working on standards for dust explosions in determining data for use in engineering work on explosion prevention and control. Equipment is also available for demonstrating the explosive characteristics of hazardous vapor-air and gas-air mixtures, as well as equipment for accurately determining the flash points and ignition temperatures of flammable liquids.

Wool Industry Asks For Shrinkage Practice Rules

THE American Wool Council, along with Botany Mills, Inc, Forstmann Woolen Company, Pacific Mills, Pendleton Mills, American Cyanimid Company, and the Monsanto Chemical Company, has asked the Federal Trade Commission to set up trade practice rules governing the advertising and labeling of wool shrinkage processes, and to provide standard terminology and definitions. The request was made at a meeting with Henry Miller, director of the FTC trade practice conferences and Wool Labeling Act administrator. As a result of the meeting, it is expected that a trade practice conference will be authorized. To help in organizing such a conference, the various divisions of the industry concerned with processes and substances designed to make wool fabrics more shrink-resistant will set up committees which will draft proposed rules.

Several Government Branches Show Interest in Meeting

Other branches of the government indicated their interest in the problem by taking part in the meeting. They included representatives from the War Department's Office of the Quartermaster General; National Bureau of Standards; and Bureau of Home Economics, Department of Agriculture. Australian embassy economic specialists also were present.

The reason for the strong interest shown in government control over wool shrinkage is the large number of different processes now being promoted for the purpose of making wool fabrics shrink-resistant and washable, it was explained. Thirty-six such processes are now being offered, and activity in treating wool for shrinkage control is increasing constantly.

F. Eugene Ackerman, executive director of the American Wool Council, told the meeting that claims now being made for the different processes often are unwarranted and overzealous. "In too many instances," he said, "the imagination of the copywriter has outdistanced the sober results of the technicians. As a result, manufacturers, retail merchants, and the public have become confused."

The term "shrinkproof" should not be used in any honest description of the processes now being offered, Mr Ackerman said, because, he explained, there is no process at present which can render wool or any wool product shrinkproof. This statement, however, was disputed by others present at the meeting.

"We believe that during the next five years there will be general acceptance of wool shrinkage control for many types and price ranges of apparel, and for substantial qualities of yarn goods," Richard E. Sumner, manager of the American Cyanimid Company's resin department, told the meeting. "As emphasis shifts from development to sales, we are concerned that standard definitions be accepted by the producers of finishes and by the textile industry to avoid confusing retailers or the consuming public."

It was indicated that washability as well as shrinkage would be included in the proposed FTC rules. Color fastness will be touched only in its relation to shrinkage, it was said.

The Executive Committee of the ASA Sectional Committee on Textile Test Methods, L14, following action at its meeting August 7 (see page 234), has offered its cooperation to the Federal Trade Commission in developing any test methods that might be desirable. In his letter to the FTC, Dr Jules Labarthe, Jr, chairman of Sectional Committee L14, included the personnel list of this committee, indicating the well-balanced representation from producer, distributor, and consumer groups.

Textile Chemists Study Wool Shrinkage Tests

Another activity undertaken recently on wool shrinkage is the work authorized by the American Association of Textile Chemists and Colorists to provide the textile industry with a method of measuring wool shrinkage. A meeting of the Steering Committee on Dimensional Changes in Textiles of the AATCC agreed July 30 to go ahead with studies of wool fabrics and of the finished garments. One group, in Boston, will work on woven fabrics and garments of wool; Philadelphia will seek a better method of measuring shrinkage of wool hosiery; and a group in New York will concentrate on knit fabrics and knitwear articles other than hosiery.

At present, industry does not have any method of deciding satisfactorily if a wool item is washable, or of evaluating the degree of washability and shrinkage resistance, it was explained. One of the chief problems facing the investigators is expected to be that of determining by test what degree of washing need be carried out in the test to correlate with performance in actual use.

U. S. Testing Company Installs Quality Control and Testing Laboratory

The United States Testing Company, Inc announces that it has installed a quality control and testing laboratory in the plants of the Stowe Cotton Mills and Pharr Worsted Mills, Inc at McAdenville, North Carolina.

This laboratory is equipped to conduct conditioned weight tests on worsted and cotton yarn, as well as all other routine tests necessary to insure the manufacturer of a uniform high quality product. In addition, the laboratory will also serve to investigate the value of new processes, finishes, and developments, it is announced.

Standard Letter Symbols Used

Chemical Industries has announced that it, as well as most of the other American chemical publishers, has adopted the American Standard Letter Symbols for Chemical Engineering, Z10.12-1946.

To Plan Requirements for Industrial Power Truck Safety

A NEW project, Safety Code for Industrial Power Trucks, B56, has just been initiated by the American Standards Association, with the American Society of Mechanical Engineers invited to serve as sponsor.

The scope of the new project, also approved by the Safety Code Correlating Committee, is as follows:

Safety requirements relating to industrial power trucks, such as platform trucks, tractors, low lift trucks, high lift trucks, fork lift trucks, and special industrial trucks, but not including commercial motor vehicles intended for use upon land highways; these safety requirements to include such factors as operating controls, brakes, steering, stability while lifting and carrying loads, maneuverability, etc.

The original suggestion for a code on this subject was in the form of a resolution passed at a technical session, sponsored by the Materials Handling Division, of the semi-annual meeting of the ASME in June 1946. In January of this year the society submitted the request to the ASA for the organization of a national committee to undertake the development of a safety code in this field. The Electric Industrial Truck Association had also expressed its willingness to participate in such a project.

Although the system of moving and storing materials by use of industrial trucks has been evolving since 1906, the stimulus of military requirements during the recent war has so widely increased its application to peacetime needs that it is estimated there are more than 60,000 such trucks and trailers in the service of American business and peacetime Government agencies today.

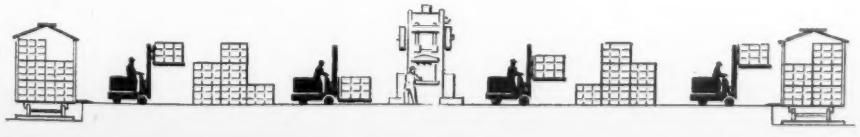
The entire field of material handling has been greatly changed with the advent of industrial power trucks and their resulting economies in time and labor costs. But while the back-straining and toe- and finger-crushing of manual handling has been removed, a new lot of hazards to the industrial worker has been introduced.

The problems to be considered by the sectional committee which will be formed will necessarily involve many of the features of the construction of the trucks. Uniformity of steering and control will undoubtedly be one of the factors to be studied. Present practices provide enough of a variety of steering, braking, and other controlling mechanisms so that even interchanging drivers between different makes of trucks may create a serious hazard. Agreement on steering will require, for one thing, agreement on nomenclature. This will indicate, to some extent, the work that will greet the new committee.

The dangers inherent in narrow aisles, floor strengths, tiering of heavy loads, operation in both directions and speed of the vehicles, fumes created by gasoline-powered trucks in indoor work, controllability in lifting and lowering functions, and stability of the trucks will also face the members who will work on the Safety Code for Industrial Power Trucks.

Several states have already adopted safety codes for the design and use of industrial trucks, but the codes vary in the different states. The lack of complete information, together with the desire to protect the worker from hazards created by this valuable method of material handling, may lead to regulations which would unnecessarily restrict the use of the trucks in industrial plants.

The new project, under the procedure of the American Standards Association, will include representation from all interested parties to frame a Safety Code which will give protection to workers at the many piers, warehouses, railroad terminals, and factories where industrial power trucks are employed.



SAE Announces Work On New Drawing Manual

The need for standardization of drafting practices in the automotive industries has led to the creation of a special committee within the Society of Automotive Engineers to undertake preparation of a comprehensive manual on the subject, the SAE has just announced.

Basically, the new manual will be patterned after the SAE Aeronautical Drafting Manual which, during the war and subsequently, the SAE explains, demonstrated the advantages of uniformity, especially in cases involving interlocking of engineering and production techniques in departments, divisions, companies, industries, and the various branches of the military.

The project will be developed by a steering committee of 15, with W. A. Siler, Delco-Remy Division, General Motors Corporation, as chairman. Members of the committee will function as chairmen of subcommittees which jointly will prepare the manual. Each subcommittee will develop a different phase of the project and, later, this work will be coordinated so that the manual may cover the entire field. These subcommittees will be responsible for size and format; editorial work; line conventions, lettering, and sectioning; projection and development, dimensioning; abbreviations, notes, definitions, and symbols; threads; gears, splines, and serrations; forgings; castings; small stampings; finish designations on drawings; springs; bodies; chassis frames.

Navy Issues Draft Manual of Management Terminology

A preliminary edition of a manual of standard definitions covering administrative and management terminology in use in U. S. Naval Shipyards is being circulated to Navy organizational units by the Navy Department, Bureau of Ships, for technical review and comment. Technical shipbuilding terms are not included. On the basis of comments received, this preliminary issue will be corrected and revised and the manual will be published in printed form. It is planned that revisions and additions will be made periodically.

Committee Asks Data On Safety Shoes

TO obtain information for use in revising the wartime specifications for safety shoes, Sectional Committee Z41 is sending a questionnaire to the manufacturers and users. Any one who has had experience with the American War Standards is invited to send answers to the following questions to the American Standards Association, 70 East 45 Street, New York 17, N. Y., attention D. F. Hayes.

QUESTIONNAIRE

1. Have you used the American War Standard Specifications for Protective Occupational Footwear, Z41-1944
   for specifying for purchase?
   testing shoes?
   manufacturing?
2. Have you used or required any tests other than those specified in the Code? Please explain.
3. Are the values for the impact tests
   too severe?
   too lenient?
   satisfactory?
4. Are the values for the compression test
   too severe?
   too lenient?
   satisfactory?
5. Is the assumption correct that a toe cap that has passed the impact test will, in all cases, pass the compression test? (It has been held that the compression test is less rigid.)
   Yes No
6. If the above assumption is correct, would it be practical to eliminate the compression test?
   Yes No
   If the answer is "No," will you please explain.
7. The present specifications require that the minimum clearance beyond which the toe cap shall not be depressed shall be ½ in. for men's shoes and ⅜ in. for women's shoes. (A set of British standards specifies ¾ in. for men's shoes.)
   Have you had any experience which would indicate that values of ½ in. and ⅜ in. are too small?
8. What changes, if any, would you suggest for clarifying the language of Section 4 in Men's Safety-Toe Shoes, Z41.1?
9. Are the specifications for steel (Note 2, page 10) adequate, or could better steels be specified?
10. Can specifications be written for materials other than steel, which would meet the present requirements for toe caps?
11. What width of flange (around the bottom of the toe cap) should be specified?
12. Is the present form of the toe cap (with a flanged bottom) the best?
13. Do you know whether or not cutting the toe cap off the shoe, as specified in 4.3.1 Men's Safety Shoes, page 8, reduces the resistance of the toe cap to compression or impact?
14. 4.3.1 (Men's Safety Shoes, page 8) specifies that the tests for compression and impact shall be made on a finished, unworn size 8D safety shoe. Should this selection of one size be retained, or should the values for compression and impact be required of *any* size shoe?

ASTM Committee on Oxychloride Cement To Work with ASA Flooring Group

A new technical committee on magnesium oxychloride cement materials, to be designated as C-2, has been organized by the American Society for Testing Materials. This committee will function closely with the sectional committee on specifications for the installation of oxychloride cement flooring of the American Standards Association. Known as A88, this sectional committee is sponsored jointly by the National Bureau of Standards and the ASTM.

Magnesium oxychloride cements have been used in the construction field for many years. Their principal usage has been as an interior flooring or as a base for interior flooring surfaces such as asphalt tile or terrazzo. Down through the years there has been some uncertainty as to the quality and serviceability of the final flooring product. This has been due to the lack of standardization, both of materials and of methods of laying this type of flooring.

The new ASTM committee will be headed by Dr L. S. Wells of the National Bureau of Standards as chairman.

JAN Works Toward Unification Through ASA

Two new standards approved by the Army-Navy Joint Specifications Board, JAN-STD-2, Drawing Sizes, and JAN-STD-12, Abbreviations for Use on Drawings, have been submitted to the American Standards Association. These standards have, in turn, been referred to ASA Sectional Committees Z14 on Drawings and Drafting Room Practice and Z32, Graphical Symbols and Abbreviations for Use on Drawings, for consideration as to the possibility of bringing about the unification of industrial practices and those of the services. These are the first in a series of drafting practice standards under development by the Board to unify the drafting practices of the War and Navy Departments and are now mandatory for use by the services and bureaus of the two departments.

Study Need for Standard For Architectural Drafting

A survey is now being made among architects, architectural schools, the Public Buildings Administration, contractors, and builders on the advisability of preparing an American Standard for architectural drafting.

Many queries have been received by the American Standards Association as to whether American Standards are available which apply to such items as door and window indication, dimensioning, electrical symbols, plumbing symbols, general drafting, and material cross sectioning. While Project Z32 on Graphical Symbols and Abbreviations for Use on Drawings has produced an American Standard for Graphical Electrical Symbols for Architectural Plans, Z32.9-1943, and other standards have touched on symbols for plumbing fixtures, the ASA has never undertaken the preparation of a standard for general architectural drafting.

If it developed that there is a general interest in the subject, steps will be taken to get a formal decision by the groups concerned with the subject as to whether an ASA project on architectural drawing shall be organized.

New ASA Members Represent Many Varied Fields

THE membership list of the American Standards Association has undergone several recent changes with the addition of two new Member-Bodies, four new Associate Members, and an elevation from the status of Associate Member to Member-Body for an additional five members. This should be indicative of the trend by industry toward a feeling of greater responsibility for the development of effective national standards. The ASA, as a national federation of trade associations, technical societies, and government agencies, provides a medium through which these new members can work with other industrial members toward this end.

The new Member-Bodies are the National Office Management Association and the National Screw Machine Products Association; the new Associate Members are the Acoustical Society of America, the Association of Consulting Management Engineers, Inc, the Controllers Institute of America, and the Farm Equipment Institute. The Anti-Friction Bearing Manufacturers Association, Inc, the Asbestos Cement Products Association, the Asphalt Roofing Industry Bureau, the Insulation Board Institute, and the Research Council of the Academy of Motion Picture Arts and Sciences have transferred their membership from Associate Member to that of Member-Body.

The National Screw Machine Products Association is comprised of manufacturers of screw machine products made from bar stock on automatic screw machines for sale to customers who order under their own specifications. The Association has 220 members in some 18 states from coast to coast.

Standardization Work Important To Screw Machine Products Body

Because standardization is of great importance to this industry, the Association has devoted much effort to mechanical work of the ASA, as well as to its own special projects. Besides concerning itself with matters of quality control and surface finish identification of screw machine products, its own particular program includes a topic which the Association believes to be of major importance to its industry. This is the development of a standard color code to be used by all steel and brass companies so that the same colors would be used to identify the chemical analysis of bar stock. In discussing this subject, the Association commented that the help of the ASA may eventually be requested after the Association has laid a foundation.

President of the National Screw Machine Products Association is Ted Lundberg, Lundberg Screw Products Company, Lansing, Michigan.

Aim of NOMA's Activities Is Better Office Management

The National Office Management Association, better known as NOMA, attempts to "stimulate thought and action leading to better management in the office." It achieves its purpose through national, regional, area, and chapter meetings; exhibits of office equipment; a series of publications; research in office operation; the establishment of office standards; and through assistance to educational institutions.

The Association operates through a central headquarters office located in Philadelphia, 13 areas which geographically divide the United States and Canada, and 85 chapters.

Among NOMA's many contributions to its field through research and standardization is its recent request to the ASA for the initiation of a project on office standards. As a result of this action, the ASA undertook organization of the project last fall under the sponsorship of the National Office Management Association.

The field of acoustics is well covered by the Acoustical Society of America, founded in 1929. Its membership, which now numbers 1300, increased considerably during and immediately after the war, due to important naval and military application of acoustical science.

In standardization realms, the Society has a committee of its own which functions under the chairmanship of Dr Leo L. Beranek of the Massachusetts Institute of Technology. This committee does not itself work on standards but, instead, coordinates the various standardization activities in which the Society may be involved. Included under this would be its work with the ASA. In addition to being represented on several sectional committees, the Acoustical Society is sponsor of the ASA project on Acoustical Measurements and Terminology, Z24.

Dr John C. Steinberg, Bell Telephone Laboratories, whose contributions to the field are well known, is president of the Society. Its next annual meeting is at Los Angeles on December 12 and 13.

Founded in 1929 by a group of the oldest firms of management engineers, the Association of Consulting Management Engineers, Inc, was set up as a means of creating a central body to which business might look for the maintenance of standards of excellence in the profession. Management engineering applies engineering methods to a widening range of business problems. Such varied experience from so many sources has flowed into the broad stream of service that management engineering offers today that the scope of its service now includes plant design and layout; controlled flow of production; product determination and design; market surveys and marketing methods; factory methods, standards and supervision; personnel evaluation and procurement; training and compensation, labor relations; accounting, costs, budgets, office standards, routines, and systems; financing of operations and mergers; and counsel on problems of policy, organization, and management of every kind.

The Controllers Institute of America is a technical, professional organization. From the original group of 30 controllers which founded the Institute in 1931, the number has now grown to 2,900. Membership is open to controllers, and in some cases assistant controllers, of sizable companies. Among the many services which the Institute undertakes is the study of accounting, budgetary, financial, management, and other problems which arise in the day to day work of controllers. Such study, it is believed, will aid in improving and standardizing controllership procedure.

The standardization activities of the Farm Equipment Institute have been confined largely to standards for safety, for, with the advent of mechanized farming, it has been necessary to emphasize the safeguarding of machines as well as the care and caution to be used by farmers in the operation of their equipment.

W. A. Roberts is president of the Institute.

News from other countries

Functions of Eire's New Standards Institute

EIRE'S newly organized Institute for Industrial Research and Standards, which came into being under the Industrial Research and Standards Act of 1946, consists of four branches: the Council, the Director, the Industrial Research Committee, and the Standards Committee.

As reported in the *Standards Review* of the British Standards Institution, the Standards Committee has the duty, on behalf of the Institute, of formulating for the Minister for Industry and Commerce, specifications for such commodities, processes, and practices as the Minister may, from time to time, request. The Minister, on obtaining a specification from the Institute may, by order, declare the specification to be a standard specification for the commodity, process, or practice to which it relates. The Minister is empowered to prescribe by order a standard mark for use in connection with a specified commodity, process, or practice to indicate that it conforms to a particular standard specification. Provision is made in the Act for the grant of licenses for the use of standards marks and for the prosecution of offenses in relation to standards marks.

J. Ingram, leader of the Eire delegation at the British Commonwealth Standards Conference, has been elected chairman of the Standards Committee, and Donal T. Flood has been appointed Director of Industrial Research and Standards.

The new Institute for Industrial Research and Standards has been assured of the support of the British Standards Institution, the *Standards Review* comments.

British Auto Manufacturer Sees Need for Standard Parts

The need for more standardization of components used by the motor industry has been urged by the managing director of Joseph Lucas, Ltd, one of Britain's most famous automobile manufacturers, according to a report from the London *Times*.

"At present, no fewer than 68 models of distributors, 60 trafficators, 133 headlamps, and 98 windscreen wipers are manufactured for British cars. There are 45 Lucas starters for 58 models of cars," continues the *Times*. It is claimed that the changeover from one type of starter shaft to another immobilizes machines for two days at a time.

By contrast, the construction of batteries is said to have been reduced to about a dozen models.

The *Times* feels that there are indications that the leading British motor manufacturers are alive to the benefits of standardization of components—both as a means of reducing costs and of giving better spare parts service at home and overseas. For the new models now being planned, it is expected that only two sizes of headlamps will be made.

British and American Household Measures Coordinated

No longer should housewives of Britain and America spent anxious hours trying to convert recipes of their overseas neighbors into tasty delicacies for their own home table. As the result of a household scale for measures just approved by the British Standards Institution, the kitchen measuring cup, tablespoon, and teaspoon will have the same interrelationship as the standard cups and spoons used in the United States. Intended for use in schools, the standards will also eliminate much confusion when British recipes are used in America and vice versa.

BSI Establishes Textile Divisional Council

Standardization of textiles such as cotton, jute, linen, rayon, and wool will be supervised by a newly established Textile Divisional Council of the British Standards Institution. Five industry standards committees, working under the Council, will be responsible for the direction and development of the work in their separate fields. The Council itself will handle all problems of common interest to the industry committees and will be responsible for the policy to be adopted in regard to international standardization of textiles. At the first meeting of the Council, it was reported that Britain had been invited to undertake the secretariat for the international committee on textiles under the new International Organization for Standardization. It was agreed at that time to accept the invitation.

New Standards from Other Countries

Standards from other countries may be borrowed by ASA Members.

Canada

Code of Practice for the Use of and Care of Chains, B75-1947, 50¢
Rules, Requirements, and Specifications for the Construction of Supply Lines Crossing Communication Lines, C22.3 No. 1(C), 50¢
Standard Specifications for Iron and Steel Arc-Welding Electrodes, 50¢

Great Britain

New Standards Issued

Aerated Concrete Building Blocks (Dimensions Only), BS1364:1947
Architects', Engineers', and Surveyors' Boxwood Scales, BS1347:1947
Bees (Colonies and Nuclei), BS1372:1947
Cartridge-Fuses for Domestic Consumers' Units, BS1361:1947
Cartridge Fuse-Links for Use in Plugs, BS1362:1947
Clothes-Line Posts, BS1373:1947
Coloured Pitch Mastic Flooring, BS1375:1947
Colours for Vitreous Enamel Finishes, BS1358:1947
Colours of Light Signals, BS1376:1947
Dimensions of Ignition and Lighting Units for Motor Cycles, BS1368:1947
Kitchen Measuring Cups and Spoons, BS1348:1947
Low Heat Portland Cement, BS1370:1947

Great Britain
New Standards Issued—Continued

Methods of Testing Vitreous Enamel Finishes, BS1344:1947
Sanitary Equipment for Schools (Fireclay), MOE1-7:1947
Wrought Magnesium Alloys, BS1350:1947

Revised Standards Issued

Black Cup and Countersunk Bolts, Nuts, and Washers, BS325:1947
Dimensions of Unscreened Magnetos, BS 5027:1947
Electric Fuses Low-Voltage and Medium-Voltage, BS88:1947
Ships' Side Scuttles, BS3024:1947
Wrought Steels, BS970:1947

New Zealand

Engineering Drawing, Practice, CZ.1-1946
Footwear, NZSS 452-467, November 1946
Garden Hose, E234, November 1946
Garden Rakes, E233, November 1946
Gypsum Casting Plaster, E237, November 1946
Protective Metal Finishes Primarily for Use Indoors, E207, December 1946
Recommended Code of Practice for the Fixing of Concrete and Earthenware Roofing Tiles, E236, November 1946
Shovels and Spades of the Hollow Back Socket Pattern, E235, November 1946
Vitamins A and D Oils for Animal Feeding, E228, March 1947

Foreign Language Standards

The standards listed below are available only in the language of the country from which they were received.

Austria

Steel Rods for Reinforced Concrete: Dimensions from 5.5 Millimeter to 50 Millimeter in Diameter, Onorm B 3331, June 1947

France

Aeronautics—
  Fuel Pumps: Mounting Pad and Drive, L221-00, July 1946
  Simple magnetoes: Mounting Flange and Drive, L224-00, July 1946
Civil Engineering—
  Sewer Pipes of Oval Sections: Inside Dimensions, P16-401, March 1947
Combustibles—
  Determination of Reactivity of Coke and Carbon Anhydride (Carboxyreactivity), M03-013, (Draft Under Test)
  Mining Material: Rail Type "Vignole" (Excerpts from Standard A45-301), M81-701, February 1947

France—Continued

Domestic Economy—
  Aluminum Wares:
    Oval Frying Pan Called "Sabot", D21-311, January 1947
    Pan for Making Jam, D21-309, January 1947
    Rectangular Frying Pan, D21-310, January 1947
    Teakettle, D21-317, January 1947
    Wire Basket for Frying, D21-322, January 1947
Mechanical Engineering—
  Branching-Off for 500 Gage Line on Metal Sleepers, E52-303, February 1947
  Branching-Off for 600 Gage Line on Metal Sleepers, E52-304, February 1947
  Narrow Gage Rolling Stock: General Characteristics, E52-301, February 1947
  Narrow-Gage Rolling Stock: Height of Bumpers and Coupling Axels, E52-308, February 1947
  Narrow-Gage Rolling Stock: Tilting Hopper Carts, Nomenclature, E52-307, February 1947
  Narrow-Gage Rolling Stock: Tires, E52-306, February 1947

France
Mechanical Engineering—Continued

  Narrow-Gage Rolling Stock: Wheels, E52-309, February 1947
  Rolling Stock for 600 Gage Lines, Wheel Base Dimensions, E52-305, February 1947
Metallurgy—
  Angles, Equal Legs With Fillet and Non-Rounded Legs, A45-105
  Angles, Unequal Legs With Fillet and Non-Rounded Legs, A45-106
  Channels With Fillets and Non-Rounded Legs, A45-255
  Hot-Rolled I-Beams With Parallel Flanges, A45-204, March 1947
  Large Plates: Table of Quality Specifications (Excerpts From Standard A36-001), A36-002, February 1946
  Sections: Tables of Quality Specifications (Excerpts From Standard A35-101), A35-102, February 1946
  Semi-Finished Products for Forging, A33-101, December 1946
  Semi-Finished Products for Rolling, A33-102, December 1946
  Symbols for Designation of Treatment Received By Non-Ferrous Metals Before Delivery, A02-002, April 1947
  Rivet Rounds, A35-002, October 1946
  Round, Square, and Hexagon Bars for Bolts, Screws, and Coach Screws, A35-003, October 1946
  Zinc and Cadmium Electro-Coating, A91-102, February 1947
Railroad Material—
  Symbols for Marking Assembled Axels of French Colonial Railroads, F01-044, September 1946
  Symbols for Marking Assembled Axels of Local Railroads and Tramway Cars, F01-045, September 1946
  Symbols for Marking Assembled Axels of Various French Railroads, F01-043, September 1946
  Tank Cars: Classification, F37-001, September 1946
  Tank Cars: Terminology, F37-002, September 1946
Textiles and Leather—
  Hemp, Manila, and Sisal Ropes of 3 and 4 Strands, G36-001, January 1947
  Measurement of Breaking Strength and Elongation of Threads, G07-003, December 1946
  Percentage of Regain in Textiles, G08-001, March 1947
  Terminology Relative to Testing Methods of Textiles, G00-002, December 1946
  Terminology Relative to the Textile Conditioning Operations, G00-001, December 1946

Sweden

Agricultural Machinery; Spring-Tooth Harrows; Long and Short Teeth; Narrow and Broad Types; Horse and Tractor Drawn; SIS353222-25; 353228-29; 353251; 353254-58
Bottles for Poisonous Substances, CSB 181
Drifts for Removing Taper Tools (Revised), SMS98
Eccentric Presses: General Assembly and Details, SMS840-843
Jig-Holding, Fully Threaded Screws and Other Similar Devices, SMS940-947
Milling Machines Spindles With Taper Attachment Bearing Bushings, Spacer Rings, and Nuts, SMS906-910
Spindle Ends for Milling Machines (Revised), SMS311
Taper Adapter for Milling Machine Spindle End (Revised), SMS312

NBS Combines Simplified Practice and Commercial Standards Divisions

The consolidation of the Commercial Standards and Simplified Practice Divisions of the National Bureau of Standards into a single division called Commodity Standards has been announced by Dr E. U. Condon, director of the Bureau.

The new Commodity Standards Division will continue the Bureau's coordinating role in the development of voluntary simplified practice and commercial standards with industrial and technical groups. In addition, the Division will be responsible for coordinating Bureau work for the Federal Specifications Board. Edwin W. Ely, former chief of the Simplified Practice Division, has been appointed chief of the new Division, and F. W. Reynolds, former acting chief of Commercial Standards, will be the assistant chief.

As the official standardizing agency of the Federal Government, the Bureau works in close cooperation with nonfederal agencies doing similar work. Thus, at the present time, the Bureau is represented on over 100 committees of the American Standards Association and is the managing agency for 17 American Standards Association projects. Similarly, the Bureau is represented on 55 of the 63 technical committees of the American Society for Testing Materials, with more than 100 memberships. Close relations are maintained with other technical and industrial organizations. The continuation and strengthening of such relations is advantageous to both industry and government, Dr Condon declares.

The simplified practice program, initiated in 1921, is concerned with the elimination of uneconomical variety in lines of manufactured products. Commercial standardization, begun in 1927, is directed toward the development of voluntary standards for manufactured products. In the case of both activities, the National Bureau of Standards acts as a centralizing agency only on request from industrial, commercial, or consumer groups. Compliance with recommendations, which are approved by the groups concerned, is entirely voluntary.

An important addition to the Division's functions will be the Federal Specifications work. Such specifications are vital in the purchase of goods by Federal agencies because the bid system, used by the government to ensure Federal economies in purchasing and to give an equal opportunity to all manufacturers under our competitive system of free enterprise, requires specifications for its operation. The Division will also participate in the work of the Technical Committee of the United States Commodity Catalog Board which establishes standard lists of items for procurement and develops standard nomenclature and designation for goods purchased by the Federal Government.

Actions on Commercial Standards and Simplified Practice Recommendations

Commercial Standards

Automotive Lifts, CS142-47—

This standard has been approved and is to be effective from October 1, 1947. (See INDUSTRIAL STANDARDIZATION, May 1947, p 115.)

Diamond Core Drill Fittings, CS17-47—

Effective from July 1, 1947, the standard covers standard designs and tolerances with controlling dimensions for rod couplings, drill rods, core-barrel bits, casing couplings, casings, and casing bits. Dimensions of core-barrel bits apply to these items as machine-shop products prior to being set with drilling diamonds,

Douglas Fir Plywood, Recommended Revision of CS45-45—

The grading rules in this recommended revision of the standard cover five grades of Interior Type and seven grades of Exterior Type Douglas fir plywood; a laminated board for paneling, sheathing, concrete forms, cabinet work, and many other structural and industrial uses. In addition, there are included grade specifications for door panels, tests, standard sizes, size tolerances, reinspection rules, and nomenclature and definitions.

Staple Vitreous China Plumbing Fixtures, CS20-47—

This standard, a revision of the third edition adopted in 1942, is effective for new production from July 12, 1947. It includes sections on general and detail requirements, grading rules and method of grading, methods of test, marking and labeling, nomenclature and definitions, and recommended provisions.

Wood Fiber Blanket Insulation (For Building Insulation), Proposed Commercial Standard, TS-4417—

Minimum requirements for one grade of wood fiber blanket insulation ranging from ½ to 3 inches in thickness as made for building construction are provided in this proposed standard. It covers physical requirements and tests for thermal conductivity, density, flexibility, and fire resistance. It also gives methods of sampling, packing, and labeling.

Simplified Practice Recommendations

Glass Containers for Maraschino Cherries, R197-46—

Besides retaining the original list of items of the 1942 recommendation, this revision adds a new line of four sizes of wide-mouth jars. Recommended standard capacities, dimensions, weight of glass, and finishes are all listed in this revision.

Loaded Paper Shot Shells, R31-47, and Metallic Cartridges, R62-47—

These recommendations, which are effective from January 2, 1947, supersede revisions issued in 1945. The variety of loads in R31, which has been revised nine times, has been reduced from 4067 to 137, while the number of items in R62, revised five times, has been reduced from 348 to 138.

Medical and Surgical Hypodermic Needles for Hospital Use, R224-47—

Gages, lengths, and types of hypodermic needles for hospital use are covered in this recommendation.

Pipe Fittings, R185-47—

The original recommendation, which became effective January 1, 1942, served as the basis for mandatory orders issued by the War Production Board. Following the revocation of the last of these orders, the industry, in cooperation with the Division of Simplified Practices, drafted this revision to retain on a voluntary basis a standard of practice for these products. The revision applies to Gray Cast Iron, Malleable Iron, and Brass or Bronze Fittings, and includes a comprehensive group of fittings required for sprinkler systems, in addition to the regular lines for other purposes. Sectional and general needs are covered in the section dealing with Brass or Bronze Fittings. The recommendation is effective from September 1, 1947.

Plumbing Fixture Fittings and Trim for Housing, R227-47—

This recommendation, part of a program of simplification sponsored jointly by the Sanitary Brass Institute and the Tubular Plumbing Goods Institute, covers the necessary fittings and trim for plumbing fixtures in single and multiple dwellings.

Structural Insulating Board (Wood or Other Vegetable Fiber), R179-46—

This recommendation, first issued in 1941, supersedes the revision of 1942 and is effective from December 15, 1946. Covering the dimensions and finishes of structural insulating board, it lists the sizes, thickness, type of edge, and surface color for each kind.

Staff Executives Conference To Be Held November 13

The Conference of Staff Executives of Member-Bodies of the American Standards Association will hold its next meeting following the annual meeting of the American Trade Association Executives. The ATAE meeting is scheduled to be held November 10-12 at Virginia Beach, Virginia. The Staff Executives will meet there November 13.

Discuss New Vitamin A Reference Standard

An informal conference of representatives of the vitamin A industry was held at the Food Research Laboratories, Inc to discuss matters relating to the new vitamin A reference standard which was officially announced by the *U. S. Pharmacopoeia* Revision Committee on July 3. Among the problems considered were the time and conditions for adoption of the new factor for converting spectrophotometric E values to units of vitamin A.

Metric Committee Questionnaire

The American Standards Association is cooperating in ascertaining whether American industry is interested in the establishment of a simplified legal ratio between the inch and the millimeter and between the inch and a light wavelength. A questionnaire has been mailed by the Metric Committee to the 2000 Company Members of the ASA requesting an expression of the viewpoint of management on this matter. Returns have been received from almost 25 percent of those contacted and the committee wishes to thank these members for their cooperation. Although a deadline for the return of the questionnaire was set for August 15, the committee would appreciate hearing from all of those who have not yet responded.

New Members of Standards Council

New representatives appointed to the Standards Council, highest authority on technical work of the American Standards Association, are as follows:

Air Conditioning and Refrigerating Machinery Association—

D. W. Russell, president, Airtemp Division, Chrysler Corporation;
Stewart E. Lauer, president, York Corporation.

Asbestos Cement Products Association—

Miles V. Engelbach, The Ruberoid Company;
W. Stanley Miles, Johns Manville Corporation, alternate.

National Machine Tool Builders' Association—

Alton G. Knight, chief engineer, Hendey Machine Company, as alternate to Frank O. Hoagland. Mr Knight is also an alternate on the Mechanical Standards Committee.

Alton G. Knight; D. W. Russell

Navy Department, Bureau of Aeronautics—

Rear Admiral T. C. Lonnquest, replacing Rear Admiral L. C. Stevens for the unexpired term ending December 31, 1948.

Danish Standards Body Reports New Officers

The Danish standardization body, Dansk Standardiseringsraad, reports that its Secretaries, H. E. Glahn and O. Weincke, have been appointed Director and Chief Engineer, respectively.

Book Marks

ASTE Numerical Index (National Standards Committee, American Society of Tool Engineers, 1666 Penobscot Building, Detroit 26, Michigan)

The development of the new ASTE Numerical Index for the classification of information about metal working industrial standards and equipment specifications represents an innovation in simplification and standardization planning.

In the past, ASTE Data Sheets were designed to be filed alphabetically under the company name of the product described. Under the new system, a particular type of product is assigned a single definite number, and in the user's files all similar products, though made by different manufacturers, will be found together.

The ASTE Index is divided into two sections: a numerical listing and an alphabetical listing. The numerical listing is used to classify and file data sheets and other technical information to which the correct numbers have been assigned. The alphabetical listing is used to locate specific material when the user does not know the code number applicable to the product or process on which he is seeking information.

The code numbers in the Index were selected from the U. S. Standard Commodity Classification and the code numbers in both systems are, with few exceptions, identical. In the ASTE Index, however, only those classifications applicable to tool engineering, metal working industries, and closely related fields are included.

In the future, all Data Sheets will be numbered in accordance with the new system and the proper index number will be printed at the top outer corner of all new Data Sheets. Numbers will be assigned only after careful study and consideration by the Data Sheet Subcommittee.

Instead of being concerned only with specific products, the new classification system has given rise to a new type of Data Sheet which will present engineering information on the general performance, use, and application of a general class of product and on standards applicable to products. These will be given the broadest classification number possible and will be filed just ahead of, but separate from, the Product Data Sheets. This should provide an easy method for tool engineers to classify and file all types of engineering data, the Society announces.

ASTM Standards on Concrete and Concrete Aggregates (American Society for Testing Materials, 1916 Race Street, Philadelphia 3, Pa., $2.00)

This compilation of standards gives in the latest approved form the 53 specifications and test methods covering cement, concrete reinforcement, preformed expansion joint fillers, and sieves for testing purposes. Most of the standards were developed in Committee C-9 on Concrete and Concrete Aggregates, but the work of several other committees is also represented.

More specifically, the book includes specifications dealing with such topics as sieve analysis, soundness of aggregates, specific gravity, mortar-making properties, concrete curing materials, as well as air content, compressive strength, flow, flexural strength, sampling, slump test, and volume of concrete.

BNA—1947 (Bureau des Normes de l'Automobile, 2 Rue de Presbourg, Paris, France)

The French Bureau of Automobile Standards has issued its 1947 edition covering the whole field of automotive standardization. The volume is divided into four parts, as follows:

Part 1 contains a diagram showing how standardization work is done by the BNA and includes the addresses of various related standardizing bureaus;

Part 2 contains various engineering tables as well as inch-millimeter conversion tables;

Part 3 contains the names and addresses of various French firms manufacturing automobiles and accessories;

Part 4 contains about 435 French standards having direct or indirect relation to the automobile and its accessories.

A copy of the book is in the ASA Library.

Hardenability of Alloy Steels (Society of Automotive Engineers, Special Publications Department, 29 West 39th Street, New York 18, N. Y., $2.00)

Published jointly by the Society of Automotive Engineers and the American Iron and Steel Institute as a book of complete and current data on designing, testing, and ordering of steels by hardenability-band specifications, this treatise covers 62 tentative hardenability-band steels, 25 of which appear for the first time.

A second section of the book presents a technical paper, "Selection of Automotive Steels on the Basis of Hardenability," which describes how to select steels by hardenability, and discusses the advantages of the H-band as a buying index.

The third section, describing the SAE Method of Determining Hardenability, outlines procedure and equipment for the standard Boeghold and Jominy end-quench hardenability tests.

The last section presents six tables on conversion of steel hardness numbers.

Report on Standard Samples for Spectrochemical Analysis (American Society for Testing Materials, 1916 Race Street, Philadelphia 3, Pa., $1.25)

This comprehensive 1947 report extends and replaces information given in an earlier publication issued by ASTM in 1944. There have been many changes in the supply of standard materials and many new ones have been made available.

Under the chairmanship of C. H. Corliss, National Bureau of Standards, Subcommittee IV on Standards and Pure Materials functioning under ASTM Committee E-2 on Spectrographic Analysis has made an extensive canvass, and the data and discussion recorded should be of widespread interest and service. The rapid growth of spectrochemical analysis and a corresponding increase in available standard samples call for a periodic compilation of types of sources of standards for the information of analysts.

Following an introduction describing the scope of the report, there are listed in the form of extensive tables and tests, available standard samples on: iron and steel; aluminum and its alloys; magnesium and its alloys; zinc, lead, and tin alloys; and copper alloys. Miscellaneous materials include: steel-making alloys, ores, and ceramic materials; mixtures and solutions; and pure metals, salts, and electrode materials.

Symposium on Atmospheric Weathering of Corrosion-Resistant Steels (American Society for Testing Materials, 1916 Race Street, Philadelphia 3, Pa., $1.50)

This Symposium, presented at the 1946 ASTM Annual Meeting, is intended to give in convenient form an up-to-date picture, based on the latest data, of the behavior of the so-called stainless steels when exposed to the atmosphere.

The publication incorporates a great amount of information and data that have been developed not only under the auspices of ASTM Committee A-10 on Iron-Chromium-Nickel Alloys, but by leading organizations concerned with the problems. Such subjects covered include: atmospheric corrosion tests on high-chromium steels; corrosion-resistant steel for architectural applications; atmospheric corrosion tests on corrosion-resistant steel; atmospheric corrosion tests of corrosion-resistant steel wires; corrosion-resistant steel sheet in marine atmospheres; weathering behavior of corrosion-resistant steel insect screens; and the results of 15 years' exposure tests on corrosion-resistant steels.

Government and Association Standards in ASA Library

The American Standards Association maintains an up-to-date file of standards received from associations, technical societies, and government agencies. These standards may be consulted by Members at the ASA Library or copies may be obtained from the organization issuing them.

ASA Standards Activities

American Standards Approved

Specifications for Dry Cells and Batteries (NBS Circular C435) (Revision of C18-1941), C18-1947

Sponsor: National Bureau of Standards, U. S. Department of Commerce

Code for Electricity Meters (Revision of C12-1941), C12a-1947

Sponsors: Electric Light and Power Group; National Bureau of Standards, U. S. Department of Commerce

Safety Code for Bakery Equipment, Z50.1-1947

Sponsor: American Society of Bakery Engineers

American Standards Being Considered for Approval

Practice for Street and Highway Lighting, D12

Sponsor: Illuminating Engineering Society

Black and Hot-Dipped Zinc-Coated (Galvanized) Welded and Seamless Steel Pipe for Ordinary Uses (Revision of ASTM A120-44; ASA G8.7-1945)

Forged or Rolled Steel Pipe Flanges, Forged Fittings, and Valves and Parts for High-Temperature Service (Revision of ASTM A105-40; ASA G17.3-1940)

Steel for Bridges and Buildings (Revision of ASTM A7-42; ASA G24.19-1942)

Structural Silicon Steel (Revision of ASTM A94-39; ASA G41.1-1942)

Proprietary Sponsor: American Society for Testing Materials

American Standards Being Considered for Approval—Continued

Emulsion Position in Projector for Direct Front Projection of 16-Millimeter Silent Motion Picture Film (Revision of Z22.10-1941)

Emulsion and Sound Record Position for Direct Front Projection of 16-Millimeter Sound Motion Picture Film (Revision of Z22.16-1941)

Emulsion Position in Projector for Direct Front Projection of 8-Millimeter Silent Motion Picture Film (Revision of Z22.22-1941)

Sponsor: Society of Motion Picture Engigineers

Textile Safety Code (Revision of L1-1929)

Sponsor: National Safety Council

American Standards Being Considered for Reaffirmation

Manhole Frames and Covers for Subsurface Structures, A35.1-1941

Sponsors: American Society of Civil Engineers; ASA Telephone Group

Engineering and Scientific Charts for Lantern Slides, Z15.1-1932

Time-Series Charts, Manual of Design and Construction, Z15.2-1938

Engineering and Scientific Graphs for Publications, Z15.3-1943

Sponsor: American Society of Mechanical Engineers

Withdrawal of Approval Being Considered

Specification for 750 Volt Direct Suspension Overhead Trolley Contract, C15-1935

Proprietary Sponsor: American Transit Association

American Standard Submitted for Approval

Manual on Uniform Traffic Control Devices (Revision of D6-1935)

Sponsors: American Association of State Highway Officials; Institute of Traffic Engineers; National Conference on Street and Highway Safety

New Project Initiated

Safety Code for Industrial Power Trucks, B56

New Projects Being Considered

Sound Recording

Steel Raceways for Electrical Wiring Systems

Women's Dress Sizes

Projects Under Way

Definitions of Electrical Terms, C42—

Sponsor: American Institute of Electrical Engineers

Subcommittees have been named to prepare a revision of the American Standard Definitions of Electrical Terms, C42-1941.

Electric Measuring Instruments, C39—

Sponsor: Electrical Standards Committee

Subcommittee 1 on Revision of the American Standard for Electrical Indicating Instruments, C39.1-1938, met on June 19 and decided to circulate the proposed specification as completed to date to major manufacturers of electrical instruments for comment and criticism. The next meeting of the subcommittee is scheduled for September 5.

Graphical Symbols and Abbreviations for Use on Drawings, Z32—

Sponsors: American Institute of Electrical Engineers; American Society of Mechanical Engineers

A canvass is now being made of architects, manufacturers, and plumbing contractors to obtain their comments on a list of 59 symbols for plumbing fixtures compiled by a subgroup of Sectional Committee Z32. The committee is now engaged in revising American Standard Graphical Symbols for Use on Drawings in Mechanical Engineering, Z32.2-1941.

Manual on Uniform Traffic Control Devices for Streets and Highways, D6-1935—

Sponsors: American Association of State Highway Officials; Institute of Traffic Engineers; National Conference on Street and Highway Safety

A revision of the American Standard Manual on Uniform Traffic Control Devices, D6-1935, has been submitted to the ASA for approval under the Existing Standard Method and is now being considered by the Highway Traffic Standards Committee. The revised edition was prepared by a joint committee representing the American Association of State Highway Officials, the Institute of Traffic Engineers, and the National Conference on Street and Highway Safety.

Methods of Recording and Compiling Accident Statistics, Z16—

Sponsors: International Association of Industrial Accident Boards and Commissions; National Safety Council.

The Committee of Judges of Sectional Committee Z16 met on July 31 and rendered decisions on six cases brought before it. It is expected that another meeting will be held this month.

Subcommittees are now studying severity rate, industrial diseases, and accident cause code to see if there is any need for revision.

Minimum Requirements for Plumbing and Standardization of Plumbing Equipment, A40—

Sponsors: American Public Health Association; American Society of Mechanical Engineers

A revised list of personnel of Sectional Committee A40 is now before the Board of Examination for review and approval. The sponsors of the project have also requested that the scope of this project, originally

approved by the ASA in 1934, be reaffirmed.

Refrigeration Nomenclature, B53—

Sponsor: American Society of Refrigerating Engineers

A list of 275 symbols for use on drawings in the refrigeration field have been compiled by the Subcommittee on Graphical Symbols for approval as standard. The list, which was circulated to members of the sectional committee for comment and criticism, has now been submitted to a letter ballot of the committee.

Specifications for Building Granite, A91—

Sponsor: National Building Granite Quarries Association, Inc

At the organization meeting of Sectional Committee A91, held on July 15, H. H. Fletcher, representing the sponsor organization, was elected chairman and W. H. Deacy, Sr, of the ASA staff, was appointed secretary of the committee. Four subcommittees to carry through the work of the project were set up under the following headings: Nomenclature; Stock, or Raw Material; Exposed and Unexposed Finishes; and Setting.

The National Bureau of Standards is expected to name a representative to the sectional committee.

Standardization of Bolt, Nut, and Rivet Proportions, B18—

Sponsors: American Society of Mechanical Engineers; Society of Automotive Engineers

The Mechanical Standards Committee is now considering two recommendations of Sectional Committee B18, made at its February 20 meeting in Detroit, to change the name and the scope of the project. The proposed name of the committee is "Sectional Committee on Dimensional Standardization of Bolts, Nuts, Rivets, Screws, and Similar Fasteners." The other recommendation is to change the scope to read:

Standardization of complete dimensional details required for the specification and manufacture of bolts, nuts, rivets, screws, and similar fasteners.

Textile Test Methods, L14—

Sponsors: American Association of Textile Chemists and Colorists; American Society for Testing Materials

The Sectional Committee on Textile Test Methods, L14, having increased its activities to include new textile test methods, recently appointed an executive committee to expedite its work. The members of the Executive Committee are: Jules Labarthe, Jr, National Retail Dry Goods Association, chairman; William Appel, National Bureau of Standards; J. R. Bonnar, American Association of Textile Chemists and Colorists; C. W. Dorn, National Retail Dry Goods Association; Dorothy Houghton, American Home Economics Association; Leonard S. Little, Synthetic Organic Chemical Manufacturing Association; and Charles K. Everett, Cotton Textile Institute. R. E. Hess, secretary of the Sectional Committee, will serve as secretary of the Executive Committee.

The Executive Committee held its initial meeting on August 7, 1947, at which time several important subjects were discussed. It was recommended that ASTM and AATCC, sponsors of the project, be encouraged to present their textile test methods for consideration as American Standards. The projects on flammability and water repellency of textiles were reviewed and recommendations for expediting the work made. Several recommendations were also made concerning additional representation in view of the expanded scope of the committee.

New Tests, Research Feature ASTM Annual Meeting

Attention was focused on a number of important activities involving standardization and research in materials at the 50th Annual Meeting of the American Society for Testing Materials held in Atlantic City in June. As a result of approximately 350 meetings of the Society's technical committees and 19 technical sessions, 43 new tentative specifications and tests and about 70 previously published tentatives are to be adopted as formal standards. Standards recommendations were pretty well divided throughout the Society's field of work, although the Steel Committee, as a result of intensive activity during the week, reported seven new specifications.

Two awards were made at the meeting—the Sanford E. Thompson Award, recognizing an outstanding paper on concrete and concrete aggregates, to William Lerch, manager, applied research, Portland Cement Association; and the Richard L. Templin Award, which recognizes meritorious contributions describing new testing methods and apparatus, to F. B. Quinlan, metallurgical section, works laboratory, General Electric Company, for his paper on "Pneumatic Fatigue Machines."

It was announced that the 1948 Annual Meeting of the Society will be held in Detroit during the week of June 21-25 and in conjunction with this will be the Eighth Exhibit of Testing Apparatus and Related Equipment. Committee Week and Spring Meeting is planned for Washington in March.

Atlanta Committee Recommends Adoption of Building Exits Code

Minimum architectural and structural standards for existing Atlanta structures and a proposal that building operators organize and train employees in the handling of fires and the prevention of panic have been recommended by a special nine-man committee of engineering experts and city officials in an effort to avoid fire tragedies in Atlanta.

The Atlanta *Constitution*, in reporting this action, indicates that one feature of the new recommendations is a proposal that the Building Exits Code, A9.1-1946, prepared under the sponsorship of the National Fire Protection Association, and approved by the American Standards Association be adopted and enforced.

The new code, if approved by the City Council, will set the number of exits and the manner in which they must be installed and maintained; will provide standards for air conditioning systems; and will call for fire escapes, enclosed stairways, alarm systems, and the organization of employees as defense against fire and panic.

This will apply to hotels, apartments, office buildings, and other types of structures in which large numbers of persons work or live.

Swedish Visitor Studies Consumer Standards

Axel Bruzelius of Sweden was among the distinguished visitors to the American Standards Association during the past month. Mr Bruzelius is making an extensive study of work being done on consumers' problems in the United States. He is interested in standards for consumer goods, particularly standards used in control of quality.

Mr Bruzelius' work on this subject is on behalf of the Swedish Tool and Metal Small Ware Manufacturers Association, whose view is that industry should take the initiative in such matters rather than waiting for them to be taken over by the government.

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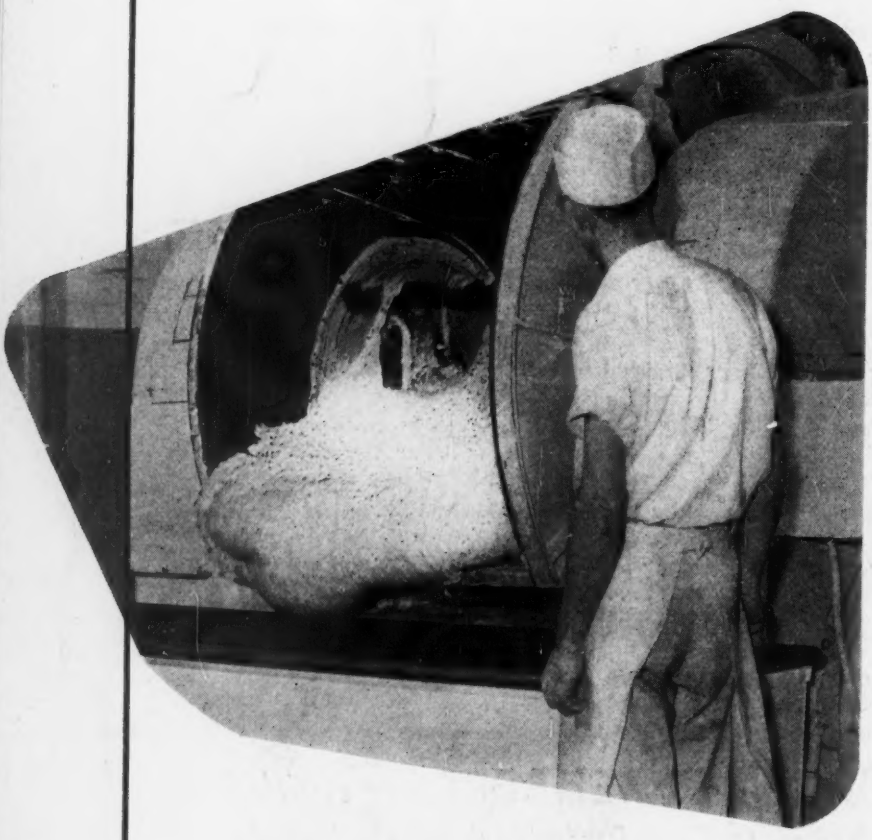

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